Reference Version

FMS

1. PROJECT CODE	2. JPIC CODE	AMS-02 TASK SHEET (ATS)
SA-AMS	AMS	

3. TYPE				4. ATS NO.	5. PAGE
A	CONFIGURATION CHANGE	☒		ATS 090127-1-R0	1 OF 116
	PERMANENT ☐ TEMPORARY	☒	6. MOD SHEET(S) NUMBER(S)		
B	NONCONFIGURATION CHANGE	☐			

10. PART NAME	11. Sub Detector Name	12. SERIAL/LOT NO.
AMS02	TRACKER TTCS S BOX	NA

14. APPLICABLE DOCUMENTS

18. ATS TITLE
TTCB Seconday FM installation

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

NOTE CAUTION WARNING

THIS ATS COVERS ALL THE INTEGRATION STEPS NEEDED FOR THE TTCB-FM SECONDARY INSTALLATION

The purpose of this ATS is to specify the TTCB installation of the TTCS boxes, that will be performed at AIDC Taiwan.

The Project Engineer: Johannes van Es (TTCS) has the option to reorder steps on site as required.

HANDLING AND HARDWARE INSTALLATION

Each operation on FM Hardware shall be done wearing gloves and in according to the following instructions

All the integration activities shall be done by qualified personnel.

The TTCS Project Engineer has the authority to work the steps in this ATS out of order.

24. ORIGINATOR	DATE	25. FINAL ACCEPTANCE STAMP AND DATE
J. van Es		

APPROVALS *(Printed or Typed and Signed)*

26. PROJECT ENGINEER	DATE	27. QUALITY ENGINEER	DATE
J. van Es	26/02/2009	JCH 蘭青星	26/02/2009
28		29.	
30.		31.	

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20. OPER SEQ NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/OV

SCOPE

The purpose of the present document is to provide information and guidelines for the installation of the TTCB FM2 components on its support and the installation into the TTCB. The integration sequence are described in

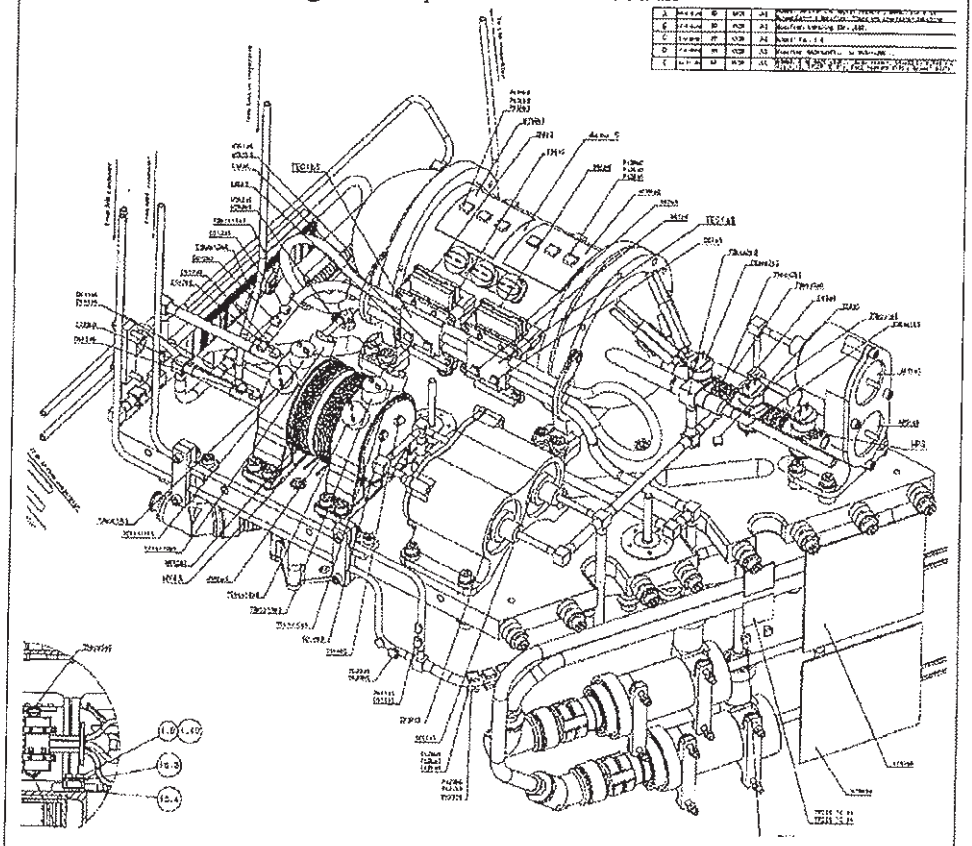

Figure 1

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APPLICABLE DOCUMENTS

The following documents in the latest applicable issue form a part of this plan to the extent specified herein:

AD	Document ID	Issue/Rev	Title
1	AMSTR-NLR-PR-021	6.4	TTCS Box Welding Procedure
2	ET5998-08-01	E/	ASSY TTCB P FM
3	ET6029-05-031	F/	ASSY HX FM S
4	ET6029-05-019	H/	HX FM P CLIP AND SUPPORT
5	ET5998-08-10	D/	TTCB FM Assembly base
6	AMSTR-NLR-PR-062	1.0	TTCB-S Box welding procedure

STANDARD AND SPECIAL TOOLS

For the hardware installation a standard tool shall be used.
Where the use of standard tooling is not possible, special tool may be employed.
Each special tool has to be identified with its Drawing Number marked, in indelible way, on the same tool
All the tools have to be clean and free from dust and grease.
For the present installation only standard tools are needed

RUNNING TORQUE MEASUREMENT

In the present integration activity we have to consider several types of locking as coupling by inserts and few by locking features on the bolts.
This value is an output from Specification [redacted] see below table.

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MIL-I-45914A

TABLE I. Internal thread self-locking torque (inch-pounds).

Insert Internal Thread Fine or Coarse	Maximum Locking Torque	Minimum Breakaway Torque
.086	2.5	.2
.112	5	.5
.138	10	1.0
.164	15	1.5
.190	18	2.0
.250	30	3.5
.3125	60	6.5
.375	80	9.5
.4375	100	14.0
.500	150	18.0
.5625	200	24.0
.625	300	32.0
.750	400	50.0
.875	600	70.0
1.000	800	90.0

Table 1: Running torque values according to MIL-I-45914A

Since it is a continuous torque it is necessary to measure it with an analogical torque wrench, obtaining the maximum torque applied during this operation.
The Locking Torque value has to be written in the relative box in the Integration Procedure Table and added to the Seating Torque required in the structural analysis, (and reported in the engineering drawings)

FINAL INSTALLATION TORQUE MEASUREMENT

Final Torque to be applied to each screw is the result of the sum of the Locking Torque (measured) and the Seating Torque prescribed from the structural analysis (and reported also on the engineering drawing).
The Seating torques to be applied for each screws are listed in this ATS
The entire torque shall be applied using calibrated torque wrench

TORQUE (T)= SEATING TORQUE (ST) +LOCKING TORQUE (RT)

- SEATING TORQUE (from structural analysis)
- LOCKING (= RUNNING) TORQUE (measured)

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LUBRICATION

All these fasteners shall be installed in LUBRICATED condition (according to the structural analysis)

The below Step by Step procedure, have to be followed for all the fittings to be used for the parts installation.

STEP	OPERATION
1	Clean screws and washers in an Isopropyl Alcohol bath
2	Let the screws and washers dry on a clean towel
3	Perform a screws and washers visual Inspection
4	Install the HX-support assembly with the washers to the TTCB-P base plate
5	Add Koropron primer if indicated
5	Measure the Locking Torque and register the value in the Integration Procedure Tables The Integration Procedure Tables are part of the present document
6	Torque the bolts to the final torque values

1.1 WARNING: for TTCB installation reference drawings are:

ET5998-08-DR-001-E-KW-ASSEMBLY TTCB FM.pdf

ET5998-08-DR-002-D-KW-ASSY COVER.pdf

ET5998-08-DR-003-C-KW-ASSY PLATES.pdf

ET5998-08-DR-004-E-KW-ASSY TUBING.pdf

ET5998-08-DR-005-E-KW-ASSY APS.pdf

ET5998-08-DR-006-E-KW-ASSY DPS.pdf

ET5998-08-DR-010-D-KW-ASSY BASE.pdf

ET5998-08-DR-011-C-KW-SIDE PLATE.pdf

ET5998-08-DR-012-A-KW-PP BOX.pdf

ET5998-08-DR-013-C-KW-CONNECTOR PLATE.pdf

ET5998-08-DR-014-F-KW-APS + DSP SUPPORT.pdf

ET5998-08-DR-015-0-KW-THERMAL WASHERS.pdf

ET5998-08-DR-016-A-KW-BRACKET PP FRONT.pdf

ET5998-08-DR-017-A-KW-BRACKET PP BACK.pdf

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	ET5998-08-DR-018-B-KW-PIPE BRACKET.pdf ET5998-08-DR-019-E-KW-TUBING.pdf ET5998-08-DR-020-D-KW-AUXILIARY TOOL.pdf ET5998-08-DR-021-C-KW-ANGLED PROFILE.pdf ET5998-08-DR-022-C-KW-SPECIAL WELD FITTINGS.pdf ET5998-08-DR-023-A-KW-INTEGRATION START UP RADIATOR.pdf ET5998-12-DR-001-A-KW-ASSY COLD ORBIT HEATER.pdf ET5998-012-DR-004-C-KW-PRE HEATER.pdf Verify before use the availability of the approved drawing revision		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
Open this	ATS		
2.	INSTALLATION OF **PUMP CONTROLLER** ONTO THE TTCB BASE PLATE		
2.1	Prepare the TTCS PUMP CONTROLLER for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
2.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
2.3	Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol		
2.4	Weight all the hardware to be installed, including fasteners. Record the weight	JcH	Jason
2.5	SCALE PN AJ-1200E 32010939 M# ____ Cal Date 08/14/2008	JcH	Jason

ITEM	WEIGHT
Bolts (NAS1351N3-10) x 6	19.09 g

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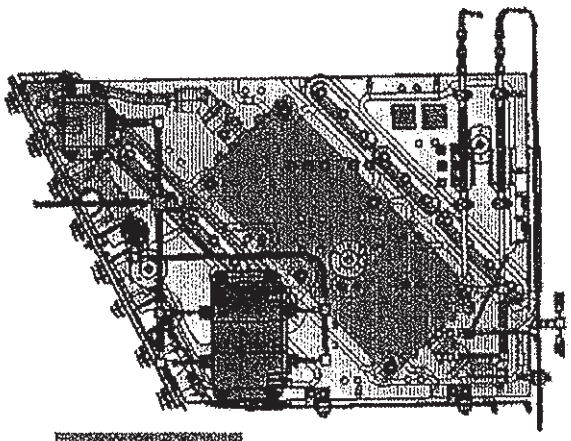
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/OV
2.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
2.6.1	Check the bill of material in the assembly drawing.		
2.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 5/5-700 Lot# 37c655 Exp. Date 4/4/09	JvE	Jason
2.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		



prior to installation pretare.

11:22
Feb 26. 2009

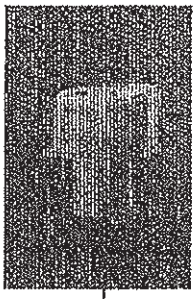


Figure 4: Installation of PUMP CONTROLLER to base plate

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
2.6.4	Apply a thin layer of Grease Braycote 601 EF (GR), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601 EF 25012-NASB Lot# 135999 Exp. Date DOM 06020 S.	JvE	Jason
2.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ Bolts NAS1351N3-10 LOT# 4617 _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#	JCH	Jason
2.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
2.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **2– 18 inch*lbf (size 0.190)**.		
2.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-10	42.237	35.901

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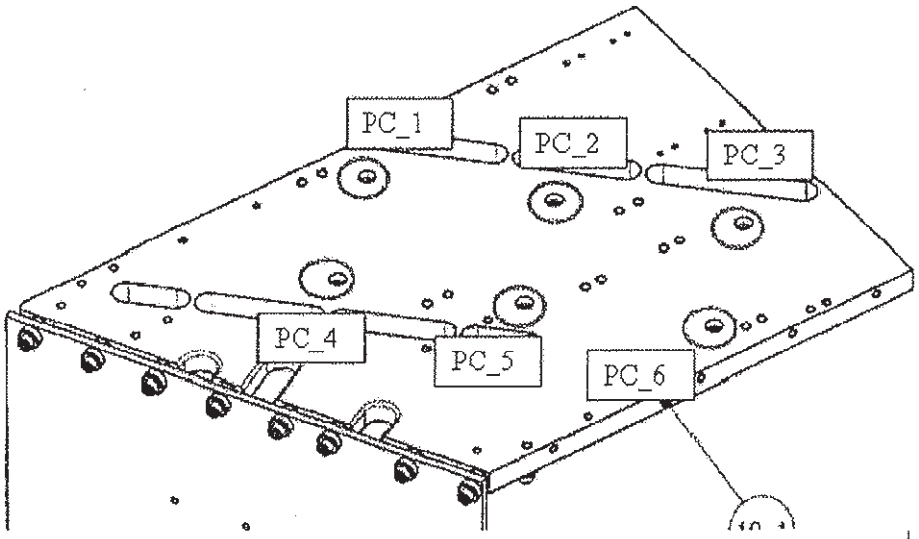

Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0309 M# _____ Cal Due Date 06/22/2009 JvE

Cal date 12/22/2008.

Torque Wrench- Final Torque

PN ~~XQRC0053~~ XQAA0309 M# _____ Cal Due Date ~~08/15/2008~~ 08/15/2009 JvE

Cal date ~~08/15/2008~~

6/02/2009

Bolt indication (see figure above)	Locking Torque	Final Torque		
PC 1	10	48.0	JvE	JH
PC 2	~~9~~ 13	51.2	JvE	Jason
PC 3	10	48.2	JvE	Jason
PC 4	~~8~~ 8.10	47.9	JvE	Jason
PC 5	~~9~~ 18	56.0	JvE	Jason
PC 6	10	48.0	JvE	Jason

inch-lbf

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
2.11	**End of online operation Pump Controller box**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. Q/VDV

3. INSTALLATION OF **APS** ONTO THE TTCB BASE PLATE

3.1 Prepare the APS for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

3.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

3.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

3.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolts (NAS1352N06-8)x4	~~4.84 g.~~ 4.84 g.
(NAS1352N08-14)x4	10.84 g.
Washer.	
NAS1149F0832R x4	1.69 g
Thermal Washer.	
1t.1 x4	3.28 g
1t.2 x 4.	5.60 g.

JCH Jason

SCALE

3.5 PN AJ-62007 320107-7 M# _____ Cal Date 08/14/2008

JCH Jason

3.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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3.6.1	Check the bill of material in the assembly drawing.		
3.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN ES-700/910-704 Lot# 370644 Exp. Date 4/09	JcH	Jason
3.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

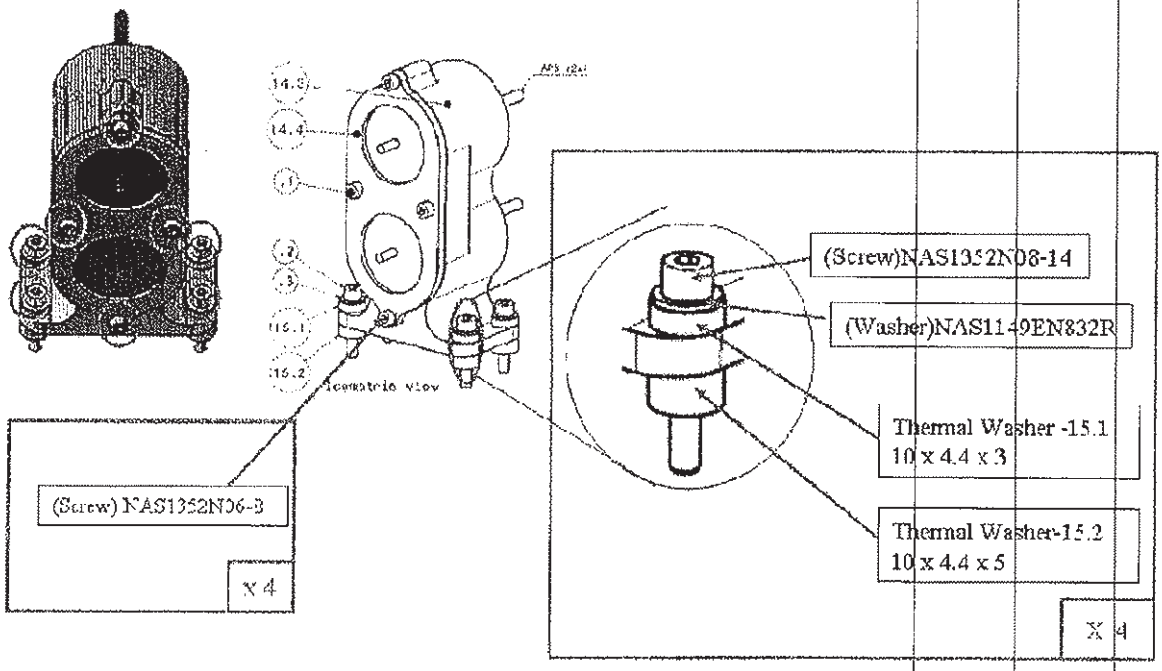

Figure 4: Installation of APS to base plate

3.6.4	Apply a thin layer of Grease, Braycote 601 EF (0.1), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EFX50T2-AMSB Lot# 135999 Exp. Date 060208	JcH	Jason

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
3.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT# _____ _____ _____ LOT# _____ Bolt NAS1352N06-8 LOT# 84387 Bolt NAS1352N08-14 LOT# ~~84387~~ 84134 Washer NAS1149EN832R LOT# 8714-10-9-03 Thermal Washer lt. 1 LOT# _____ Thermal Washer lt. 2 LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____	JCH	Jason
3.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
3.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-8 Locking torque shall be in **1.5 -15 inch*lbf (size 0.164)** for NAS1352N08-14		
3.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-8	13.861	11.782
Screw NAS1352N08-14	24.944	21.203

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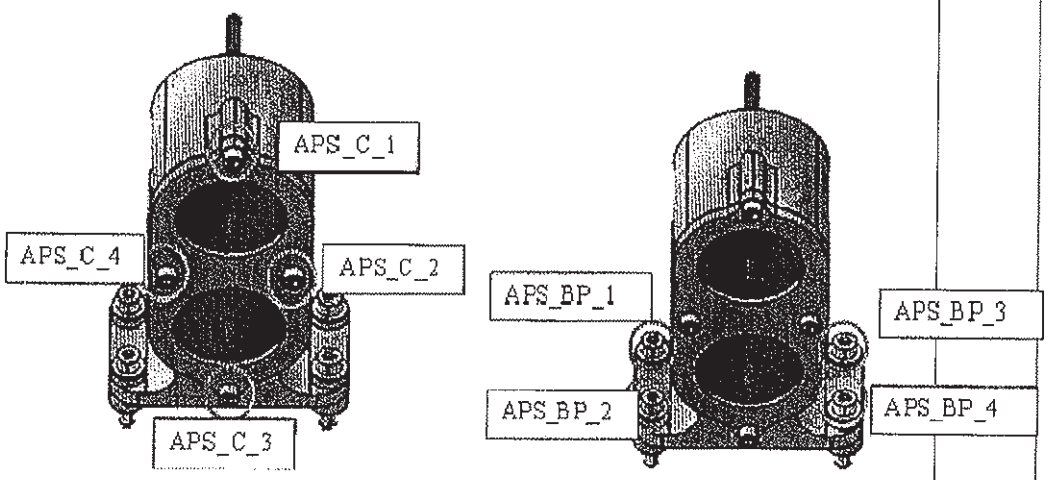

Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQ99A0309 M# _____ Cal Due Date 06/22/2009 JCH Jason

Torque Wrench- Final Torque

PN XQ8C0T53 M# _____ Cal Due Date 03/15/2009

Bolt indication (see figure above)	Locking Torque	Final Torque		
APS_C_1	6	18	JCH	Jason
APS_C_2	6	18	JCH	Jason
APS_C_3	6	18	JCH	Jason
APS_C_4	6	18	JCH	Jason
APS_BP_1	~~over~~ 10	~~36~~ 33	JCH	Jason
APS_BP_2	~~13~~ 8	~~36~~ 31	JCH	Jason
APS_BP_3	~~13~~ 8	~~36~~ 31	JCH	Jason
APS_BP_4	~~over~~ 10	~~36~~ 33	JCH	Jason

3.11 **End of online operation APS to base plate**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

4. INSTALLATION OF **DPS** ONTO THE TTCB BASE PLATE

4.1 Prepare the DPS for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

4.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

4.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

4.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolts	
NAS1352N06-8 x4	4.84 g.
NAS1352N08-14 x4	10.84 g.
Washer NAS1149FN832R x4	1.49 g.
Thermal Washer	
15.1 x4	3.28 g.
15.2 x4	1.60 g.

JCH Jason

SCALE AJ-62002

4.5 PN 320107-57 M# _____ Cal Date 08/14/2008. JCH Jason

4.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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4.6.1	Check the bill of material in the assembly drawing.		
4.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 513-700/910-704 Lot# 370645 Exp. Date 4/09	JCH	Jason
4.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

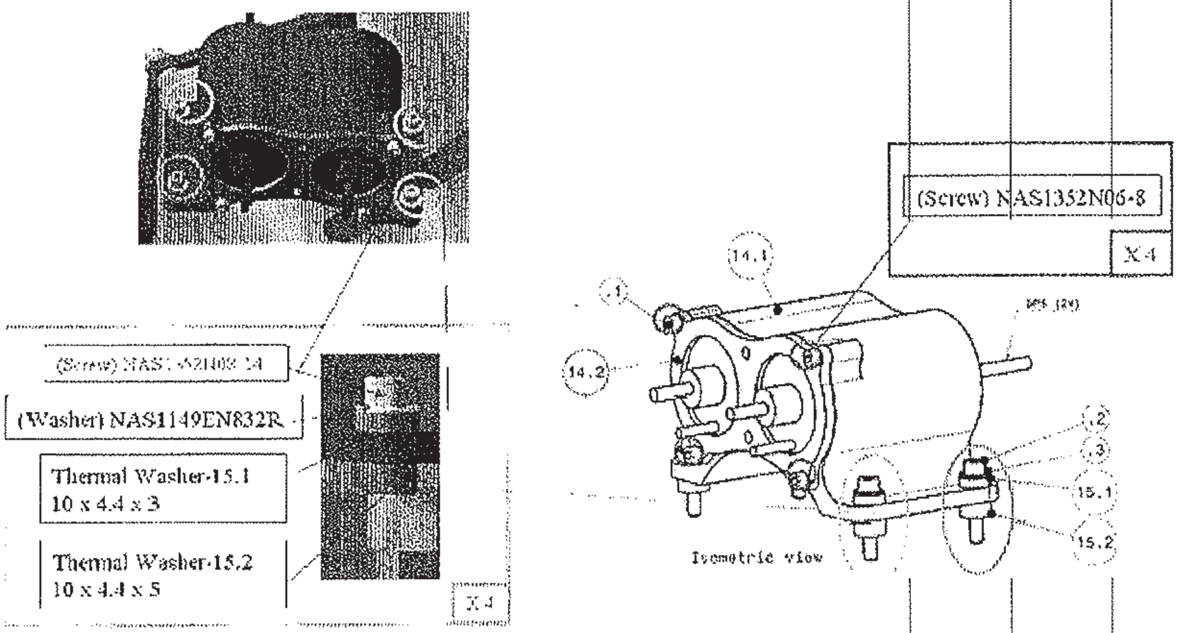

Figure 4: Installation of DPS to base plate

4.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF240Z-AMSB Lot# BE999 Exp. Date 06 0208.	JCH	Jason

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4.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT _____ _____ LOT# _____ _____ _____ LOT# _____ Bolt NAS1352N06-8 LOT# 84387 Bolt NAS1352N08-14 LOT# ~~84387~~ 84125 Washer NAS1149EN832K LOT# 8716-10-9-03 Thermal Washer 15.1 LOT# Made by AIDC (Titanium) Thermal Washer 15.2 LOT# Made by AIDC (Titanium) _____ _____ LOT# _____ _____ _____ LOT# _____	JCH.	Jason
4.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
4.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-8 Locking torque shall be in **1.5 -15 inch*lbf (size 0.164)** for NAS1352N08-14		
4.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-8	13.861	11.782
Screw NAS1352N08-14	24.944	21.203

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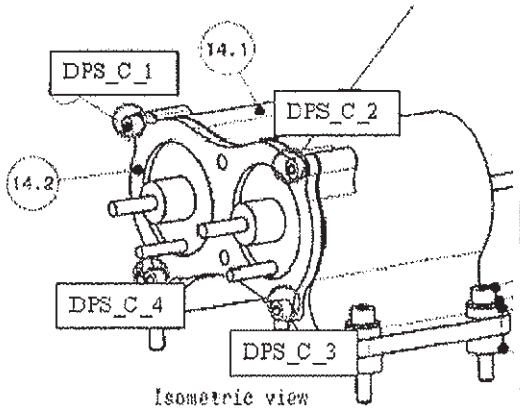

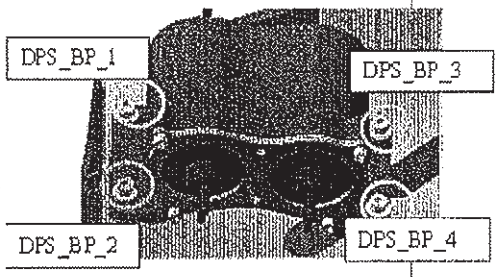

Torque Wrench- Locking Torque (locking is the same as running torque)

PN XGAA0309 M# _____ Cal Due Date 06/22/2009

Torque Wrench- Final Torque

PN ~~XGAA0309~~ XGRC0053 M# _____ Cal Due Date ~~06/22/2009~~ 03/15/2009

Bolt indication (see figure above)	Locking Torque	Final Torque		
DPS_C_1	5	17	JCH	Jason
DPS_C_2	5	17	JCH	Jason
DPS_C_3	5	17	JCH	Jason
DPS_C_4	4	16	JCH	Jason
DPS_BP_1	~~8~~ 8	31 ~~38~~ ~~36~~	JCH	Jason
DPS_BP_2	10	34	JCH	Jason
DPS_BP_3	10	34	JCH	Jason
DPS_BP_4	~~20~~ 10	~~33~~ 34	JCH	Jason

4.11 **End of online operation DPS to base plate**

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4. ATS NO: ATS 090127-1-R0
6. MOD NO:

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
5.	INSTALLATION OF **PIPE BRACKET TO** TTCB BASE PLATE		
5.1	Prepare the PIPE BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
5.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
5.3	Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol		
5.4	Weight all the hardware to be installed, including fasteners. Record the weight	JCH	Jason

ITEM	WEIGHT
Bolts	
NAS1352N06-6	4.20 g.
NAS1352N08-8	7.44 g.

5.5	SCALE AJ-60006 PN 320074	M#	Cal Date 08/14/2008	JCH	Jason
5.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision				
5.6.1	Check the bill of material in the assembly drawing.				

AMS-02 TASK SHEET (ATS)

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
5.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 515-700/910-706 Lot# 370648 Exp. Date 6/09	JCH	Jason
5.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

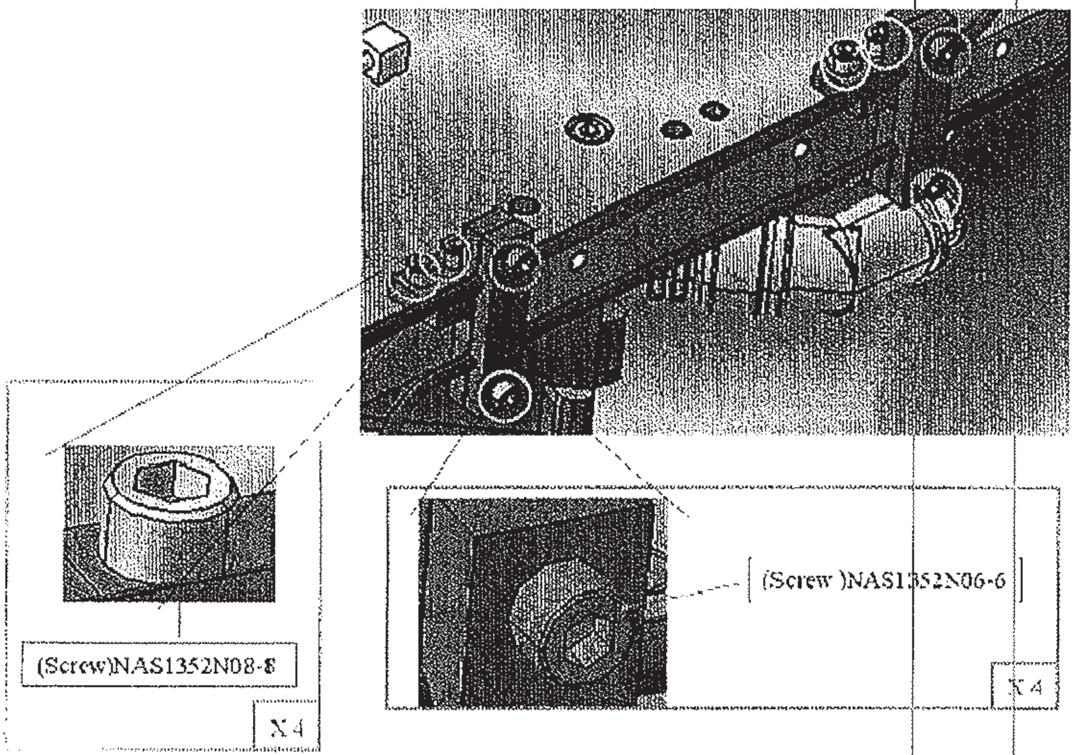

Figure 4: Installation of PIPE BRACKETS to base plate

5.6.4	Apply a thin layer of Grease: Braycote 601EF (G1), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF-2402-AMSB Lot# 13F999 Exp. Date 060208	JCH	Jason

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
5.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT ____ ____ LOT#____ ____ ____ LOT#____ ____ ____ LOT#____ Bolt NAS1352N06-6 LOT# 84908 ____ NAS1352N08-8 LOT# 84030 ____ ____ LOT#____ ____ ____ LOT#____ ____ ____ LOT#____ ____ ____ LOT#____	JCH	Jason
5.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
5.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1.5 – 15 inch*lbf (size 0.164)** for NAS1352N08-8 Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-6		
5.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N08-8	24.944	21.203
Screw NAS1352N06-6	13.861	11.782

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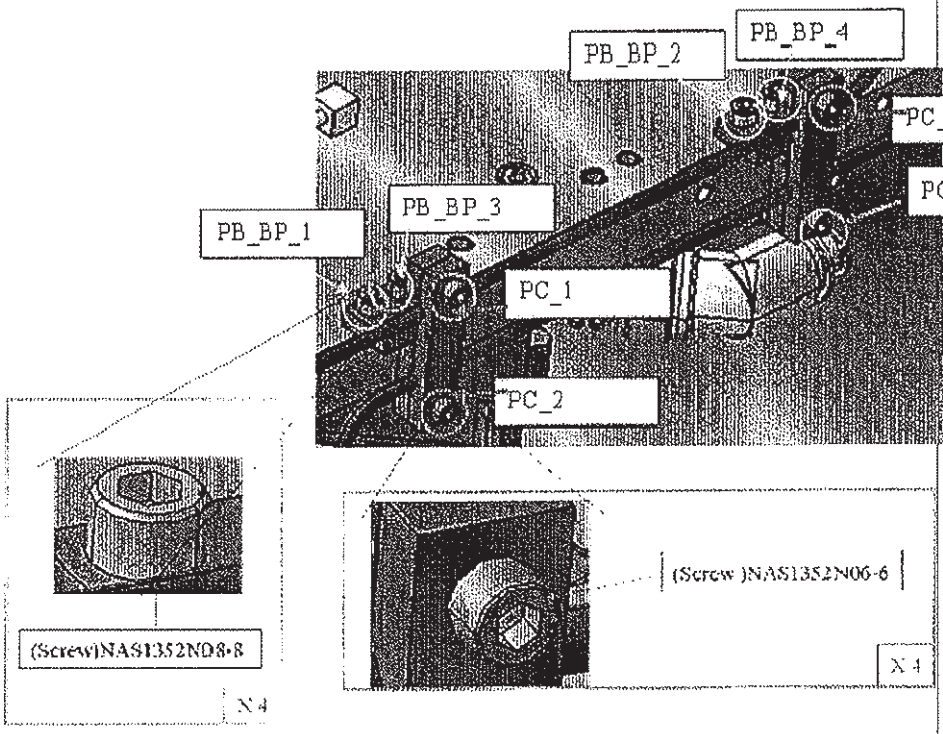
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQWC011-2 M# _____ Cal Due Date 08/14/2008 JCH Jason

Torque Wrench- Final Torque

PN XQRC0013 M# _____ Cal Due Date 08/14/2008

Bolt indication (see figure above)	Locking Torque	Final Torque		
PB_BP_1	6	30	JCH	Jason
PB_BP_3	6	30	JCH	Jason
PB_BP_2	6	30	JCH	Jason
PB_BP_4	6	30	JCH	Jason

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4. ATS NO	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	PC_1	5	13+5=18	JCH	Jason
	PC_2	7	20	JCH	Jason
	PC_3	5	18	JCH	Jason
	PC_4	7	20	JCH	Jason
5.11	**End of online operation PIPE BRACKET to base plate**				

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

6. INSTALLATION OF **PIPE BRACKET TO** TTCB COVER

6.1 Prepare the PIPE BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

6.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

6.3 Perform a visual inspection of the COVER; check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

6.4 Weight all the hardware to be installed, including fasteners. Record the weight — TECH: JCH — QA/DV: Jason

ITEM	WEIGHT
Bolt	
NAS1352N06-12 x2	3.13 g.

6.5 SCALE
PN AJ-4200E 3701027 M# ______ Cal Date 08/14/2008 — TECH: JCH — QA/DV: Jason

6.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

p26 - p28 See Addendum I.

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CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
6.6.1	Check the bill of material in the assembly drawing.		
6.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 315-700/910-704 Lot# 37645 Exp. Date 4/09	JCH	Jason
6.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

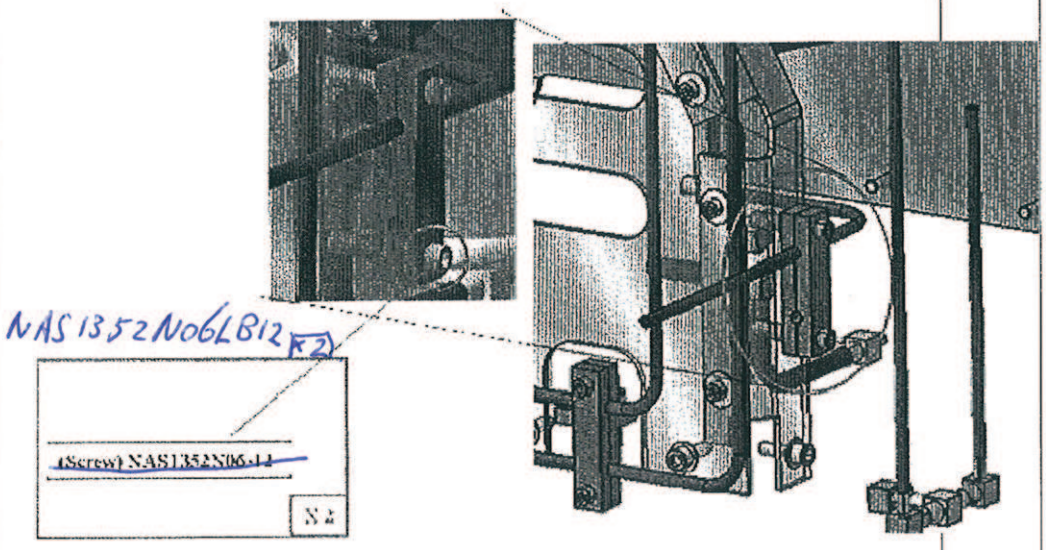

Figure 4: Installation of PIPE BRACKETS to TTCB COVER

6.6.4	Apply a thin layer of Grease Braycote 601EF (C11), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EFX3017AMSB Lot# 13F999 Exp. Date 06 02 08	JCH	Jason

Remark
Fits to RIVNUT. NAS 1330N06-106
Lot No 05-10-06-2-1018.

JVE 10/11/2009

P26- P28 See Addendum I

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
6.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____ Bolt NAS1352N06-12 LOT# ~~4L496~~ Replaced by self locking bolts at CERN _____ _____ LOT# _____ _____ _____ LOT# _____ NAS1352N06LB12 _____ LOT# 25500 See Addendum I _____ LOT# _____ _____ _____ LOT# _____	JCH JvE 10/11/2009	Jason
6.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
6.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1.0-10 inch*lbf (size 0.138)**		
6.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-12	13.861	11.782

P26 – P28 See Addendum I.

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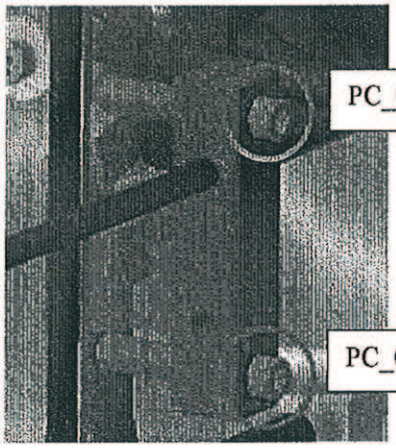
4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQWC0112 M# _____ Cal Due Date 08/14/2008 JCH Jason

Torque Wrench- Final Torque

PN XQRC0013 M# _____ Cal Due Date 08/14/2008

Bolt indication (see figure above)	Locking Torque	Final Torque		
PC_COV_1	4	17	JCH	Jason
PC_COV_2.	4	17	JCH	Jason

6.11 **End of online operation PIPE BRACKET to COVER**

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	6. MOD NO	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

7. INSTALLATION OF **ACCU BRACKET TO ACCU COLLAR**

7.1 Prepare the ACCU BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

7.2 Prepare screws and washers to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

7.3 Perform a visual inspection of the COLLAR; check the cleanliness of all the THREADED HOLES. If necessary clean them with Isopropyl Alcohol

7.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolts	
NAS1351N08-LB14 x7.	19.32 g
Washer	
NAS1149EN832R x7	2.12 g.

JCH Jason

7.5 SCALE PN AJ-6000E 3301027 M# ______ Cal Date 08/14/2008

JCH Jason

7.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
7.6.1	Check the bill of material in the assembly drawing.		
7.6.2	If not specified in the drawings apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN Lit-700/910-704 Lot# 3706tf Exp. Date 4/09	JCH	Jason
7.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

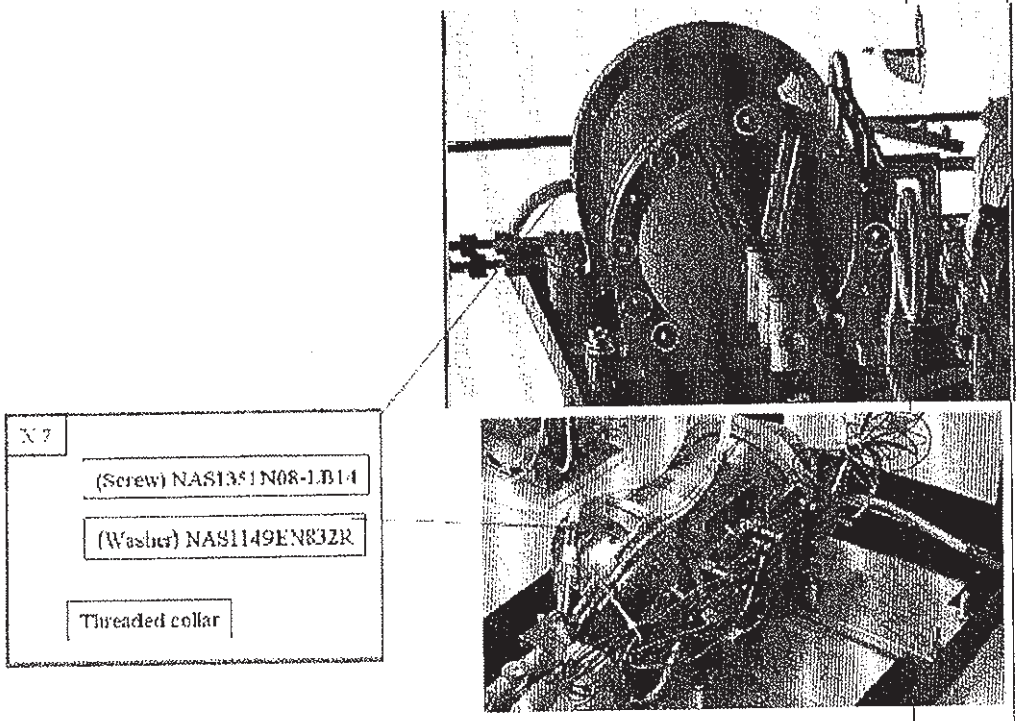

Figure 4: Installation of ACCUMULATOR BRACKET TO ACCU COLLAR

7.6.4	Apply a thin layer of Grease Braycote 601 EF NCL, to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF-50/2-AMSB Lot# 35999 Exp. Date 060208	JCH	Jason

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

7.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

Bolt NAS1351N08-LB14 LOT# ~~from dana~~ 40347 JCH Jason

_____ _____ LOT#_____

Washer NAS1149EN832R LOT# from dana JCH Jason

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

7.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N08-LB14	26.863	22.834

7.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.5-15 inch*lbf (size 0.164)**
Locking is on the bolt side.

7.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

Accu
collar

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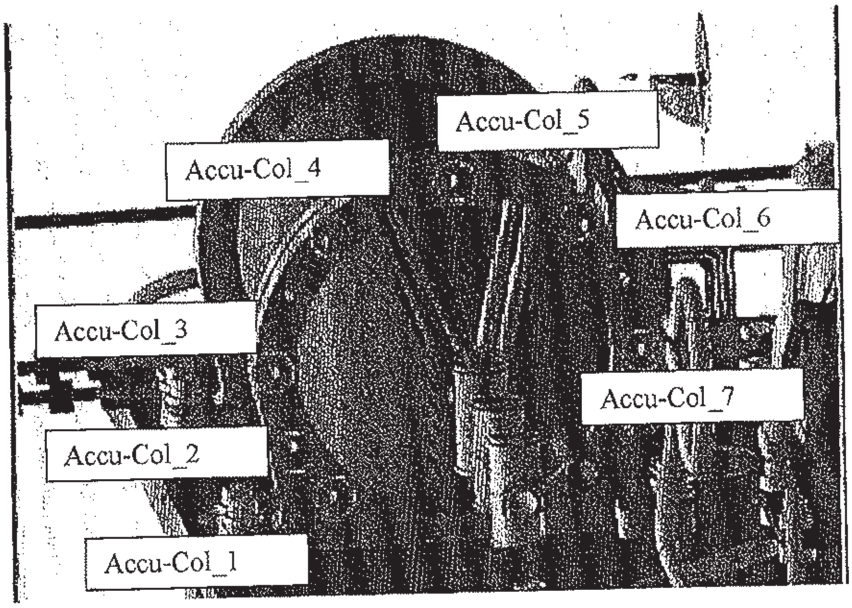
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# ______ Cal Due Date 05/~~08~~ 20/2009 — JCH — Jason

Torque Wrench- Final Torque

PN XQAA0357 M# ______ Cal Due Date 08/~~08~~ 20/2009

Bolt indication (see figure above)	Locking Torque	Final Torque	TECH	QA/DV
Accu-Col_1	~~10~~ 10	~~35~~ 35	JCH	Jason
_2	~~10~~ 10	~~35~~ 35	JCH	Jason
_3	~~8~~ 10	~~33~~ 35	JCH	Jason
_4	12	37	JCH	Jason
_5	8	33	JCH	Jason
_6	10	35	JCH	Jason
_7	10	35	JCH	Jason

7.11 **End of online operation ACCU BRACKET to COLLAR**

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4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

8. INSTALLATION OF **PIPE CLAMP TO ACCU BRACKETS**

8.1 Prepare the ACCU PIPE CLAMP for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

8.2 Prepare screws and washers to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

8.3 Perform a visual inspection of the ACCU BRACKET; check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

8.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1351N6L-10 x4	
NAS1149FN332R x6	4.70 g
brackets	30.68 g

JCH Jason

SCALE

8.5 PN AJ-42007 / 3010757 M# _____ Cal Date 08/14/2008

JCH Jason

8.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

AMS-02 TASK SHEET (ATS)

CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
8.6.1	Check the bill of material in the assembly drawing.		
8.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 5/5-700/910/704, Lot# 111GL, Exp. Date 4/09	JvE	JCH
8.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

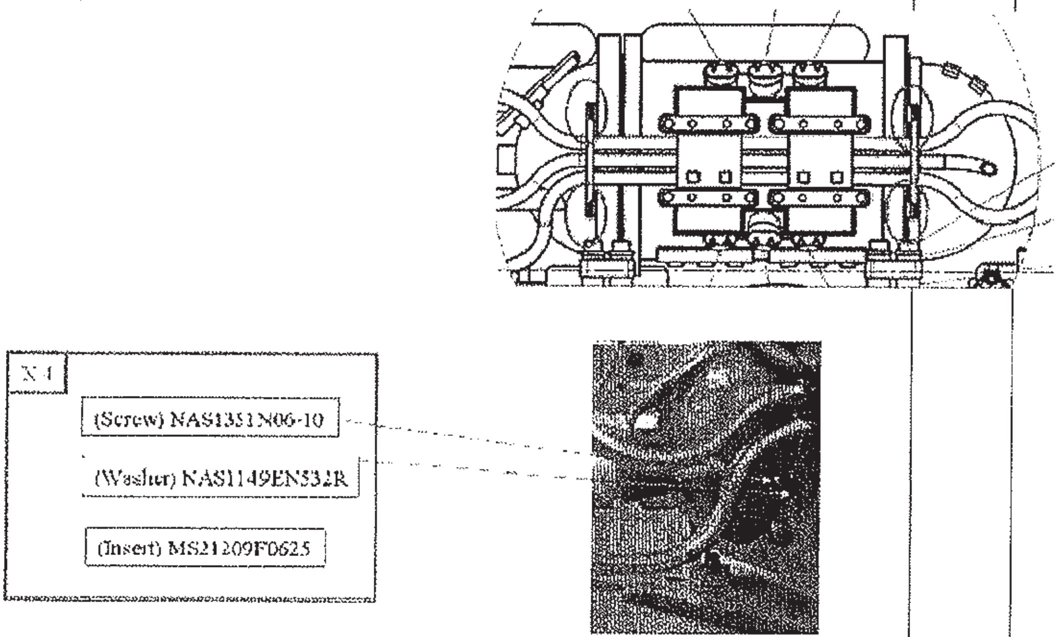

Figure 4: Installation of ACCU PIPE CLAMP TO ACCU BRACKET

20. OPER SEQ. NO.	21. OPERATIONS	22. TECH	23. QA/DV
8.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601 EF Lot# 135999 Exp. Date 10017060200 25012 AMS B	JvE	JCH.

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4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
8.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT ____ ____ LOT# ____ ____ ____ LOT# ____ ____ ____ LOT# ____ Bolt NAS1351N06-10 LOT# 3890 Ask SYSO Washer ~~NAS1149E632R~~ LOT# Ask SYSO NAS1149E632R LOT# ∅ ____ ____ LOT# ____ ____ ____ LOT# ____ ____ ____ LOT# ____	JCH	Jason
8.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
8.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1-10 inch*lbf (size 0.138)**		
8.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N06-10	15.662	13.312

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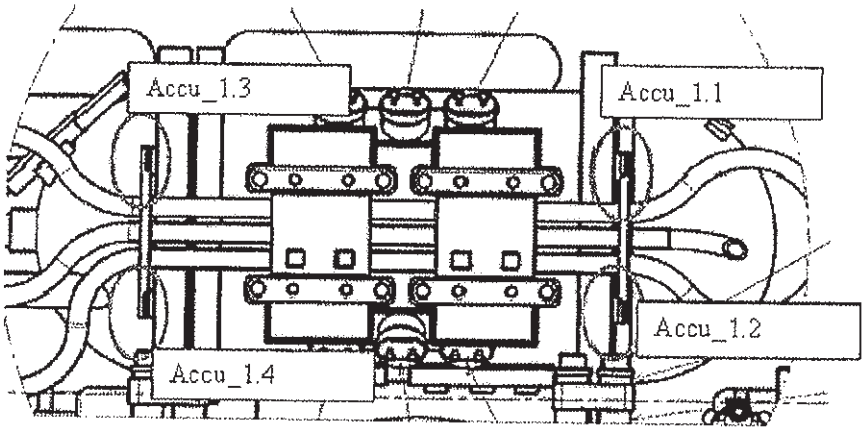
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque) 27/02/2009 MT. JvE

PN XQA A6030g M# _____ Cal Due Date 06/22/2009

Torque Wrench- Final Torque cal date 12/22/2008

PN same as Running torque M# _____ Cal Due Date _____

Bolt indication (see figure above)	Locking Torque	Final Torque	
Accu 1.1	4.0	15. JvE	26/02/2009 MDC
Accu 1.2	4.5	19.5 JvE	26/02/2009 MDC.
Accu 1.3	1.0	15 JvE	27/02/2009 MT
Accu 1.4	1.0	15 JvE	27/02/2009 MT JCH

8.11 **End of online operation PIPE CLAMP to ACCU BRACKETS**

AMS-02 TASK SHEET (ATS)
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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

9. RETORQUING OF **PELTIER TO ACCU SADDLE**

9.1 Prepare the ACCU PIPE CLAMP for RETORQUING. Perform a visual inspection of the parts to be re-torqued;

9.2 Perform a visual inspection of the ACCU BRACKET; check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

9.3 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1351N08-12 x8	20.0 g
Washer	
NAS1149ZN832R x18	2.99 g

JCH Jason

SCALE

9.4 PN AJ-42002E 320107-57 M# _____ Cal Date 08/14/2008

JCH Jason

9.5 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

9.5.1 Check the bill of material in the assembly drawing.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
9.5.2	Check the indicated components are installed as shown in the figure below.		

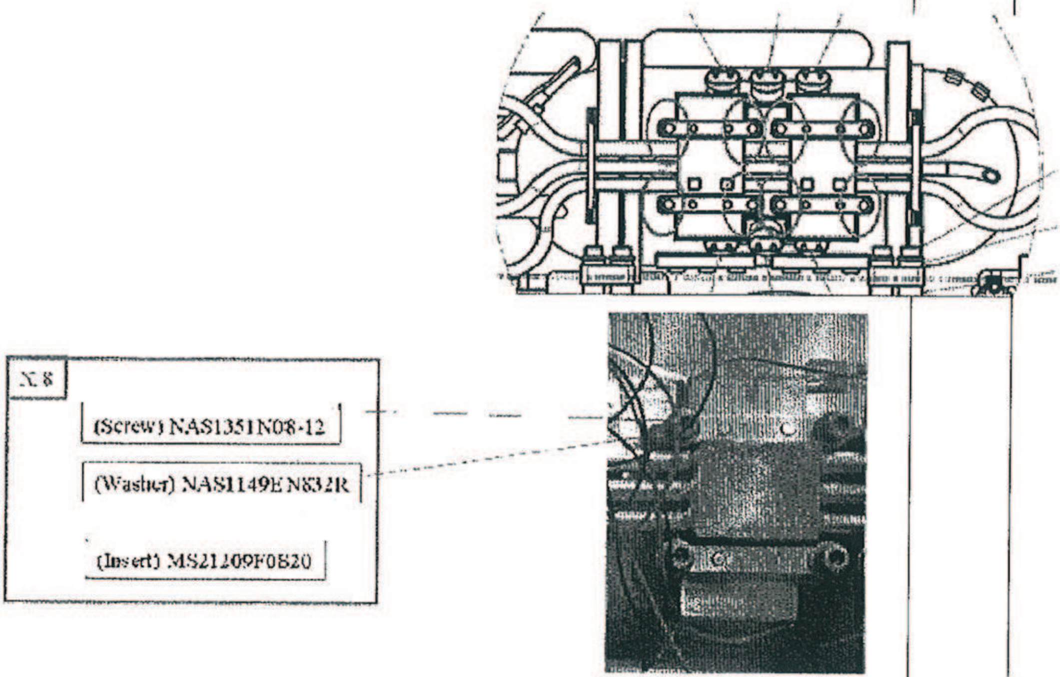

Figure 4: Installation of PELTIER TO ACCU SADDLE

20. OPER SEQ. NO.	21. OPERATIONS	22. TECH	23. QA/DV
9.5.3	Apply a thin layer of Grease: Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings). CHECK WITH PROJECT ENGINEER HERE Braycote Grease - PN 601 EF/X8/2-AMSB Lot# BJ999 Exp. Date 060208	JCH	Jason
9.6	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT Bolt — NAS1351N08-12 — LOT# Ask SYSU 43817. Washer — NAS1149EN832R — LOT# Ask SYSU 8714-10-09-03 ____ — ____ — LOT# ____	JuE JCH JuE	10/11/2009 Jason 10/11/2009.

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

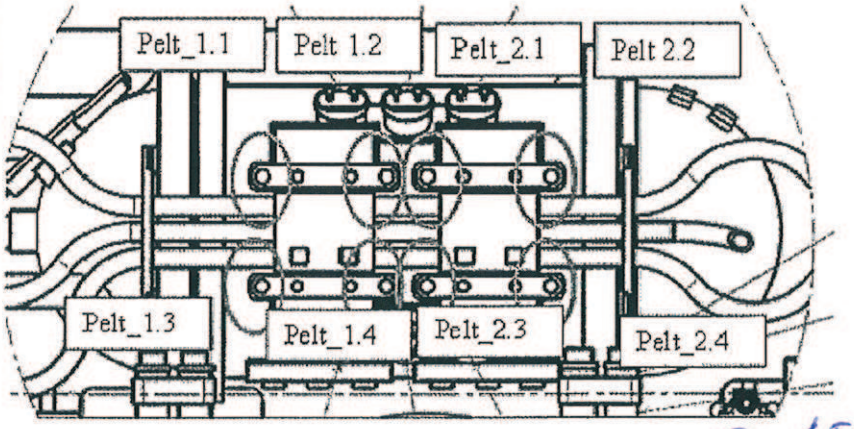
9.7 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N08-12	26.863	22.834

9.8 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.5-15 inch*lbf (size 0.164)**

9.9 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.



(a) AIDC.

Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQA AA030g M# _____ Cal Due Date 06/32/2009 26/02/2009.
cal date 12/22/2008.

Torque Wrench- Final Torque

PN XQA AA030g M# _____ Cal Due Date 06/32/2009 26/02/2009.
cal date 12/22/2008

Ask Johannes.

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

inch x lbf

Bolt indication (see figure above)	Locking Torque	Final Torque	
Pelt 1.1	< 1.0	24.0	JvE 26/02/2009
Pelt 1.2	< 1.0	24.0	JvE
Pelt 1.3	< 1.0	24.0	JvE
Pelt 1.4	< 1.0	24.0	JvE
Pelt 2.1	< 1.0	24.0	JvE
Pelt 2.2	< 1.0	24.0	JvE
Pelt 2.3	< 1.0	24.0	JvE
Pelt 2.4	< 1.0	24.0	JvE.

9.10 **End of online operation PELTIER to ACCU SADDLE**

Locking wire is attached 2 by 2

lock wire specs.
S488607 (cessna) wirelock
MS20995C32 Batch B08 1026
P/N S488607 purch. date Feb 2008

JvE 26/02/2009.

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
10.	INSTALLATION OF TTCS PRIMARY ACCUMULATOR ONTO THE TTCB PRIMARY BASE PLATE		
10.1	Prepare the TTCS Accumulator for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
10.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
10.3	Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol		
10.4	Weight all the hardware to be installed, including fasteners. Record the weight	JCH	Jason
10.5	SCALE PN AJ-4200E 32010737 M# ________ Cal Date 08/14/2008	JCH	Jason

ITEM	WEIGHT
Bolts	
NAS1352N3-16 x8	~~3.6~~ 34.56 g
Washer	
NAS1149TE0363R x8	7.44 g
Thermal Washer	
14.7 x8	6.16 g
15.4 x8	10.31 g

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4. ATS NO. ATS 090127-1-R0

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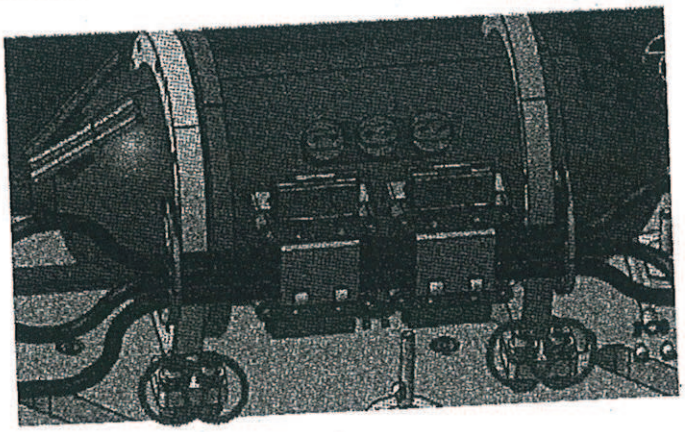
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
10.6	WARNING: for TTCB installation reference drawings are as stated at the start of this ATS. Verify before use the availability of the approved drawing revision		
10.6.1	Check the bill of material in the assembly drawing.		
10.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 41-700910-704 Lot# 370645 Exp. Date 4/09	JCH	Jason
10.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		



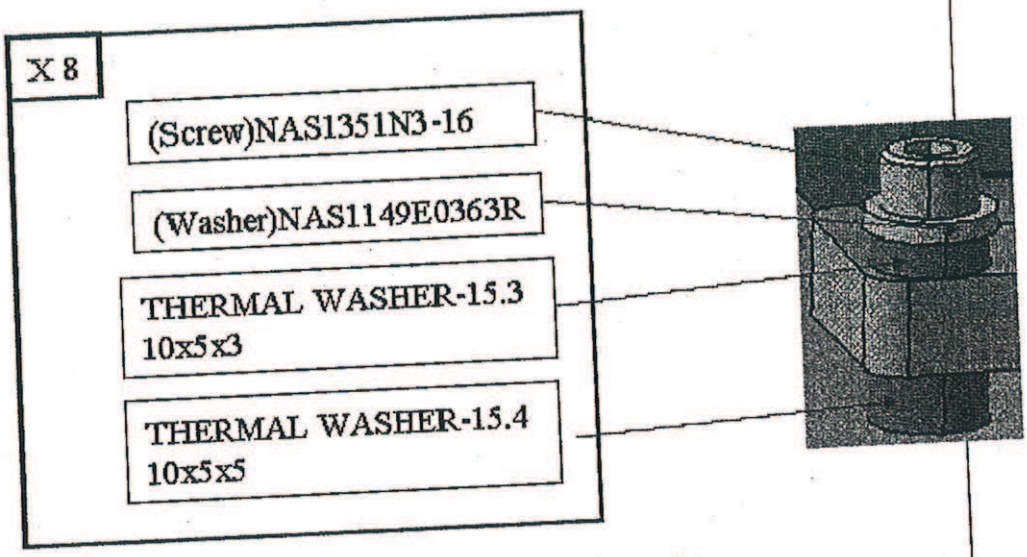


Figure 4: Installation of HX supports to dummy base plate

Fits to insert. MS21209F1-15.

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
10.6.4	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN _____ Lot# 135999 Exp. Date 060208. 601EF/25012 AMS B.	JC H Jason	
10.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT _____ — _____ — LOT# _____ Bolt — NAS1351N3-16 — LOT# 46213 Washer — NAS1149E0363R — LOT# U4857 Thermal washer — ET5998-06-15.3 — LOT# Made by AIDC Titanium Thermal washer — ET5998-06-15.4 — LOT# Made by AIDC Titanium _____ — _____ — LOT# _____ _____ — _____ — LOT# _____ _____ — _____ — LOT# _____ _____ — _____ — LOT# _____	JC H Jason	
10.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table		
10.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **2 – 18 inch*lbf**. (size 0.190")		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-16	42.237	35.901

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

10.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

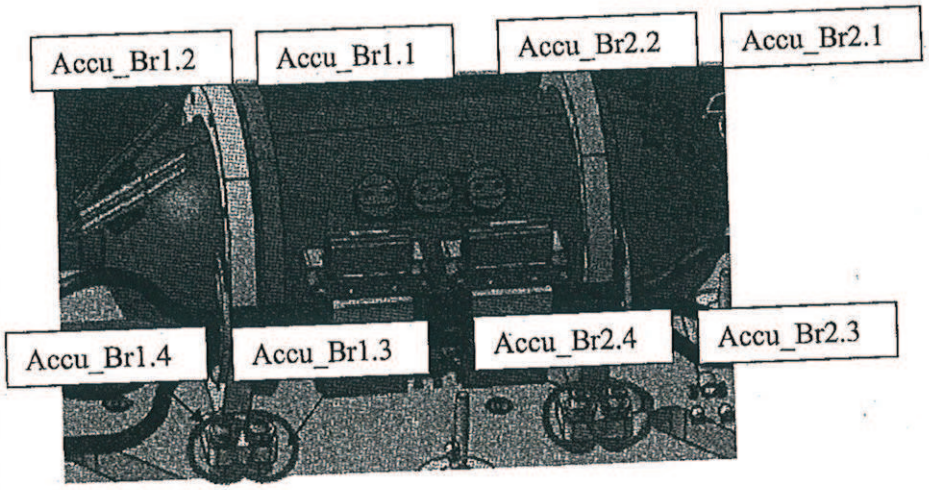

Figure: Accumulator bolt indication

Torque Wrench- Locking Torque (locking is the same as running torque) — JCH / Jason

PN XQWC0112 M# _____ Cal Due Date 08/15/2008 → 08/15/2009

Torque Wrench- Final Torque — JCH / Jason

PN XQWC0112 M# _____ Cal Due Date 08/15/2008 → 08/15/2009

Bolt indication (see figure above)	Locking Torque	Final Torque	22. TECH	23. QA/DV
Accu_Br1.1	>5 over	±8	JCH	Jason
Accu_Br1.2	>5 over	±8	JCH	Jason
Accu_Br1.3	>5 over	±8	JCH	Jason
Accu_Br1.4	>5 over	±8	JCH	Jason
Accu_Br2.1	>5 over	±8	JCH	Jason
Accu_Br2.2	>5 over	±8	JCH	Jason
Accu_Br2.3	>6 over	±8	JCH	Jason
Accu_Br2.4	>1 over	±8	JCH	Jason

Remark: Indicated here is just as in TTCB-P the running torque is larger than specified ranging from 21-26 lbf*inch. The high running torque was not to construction but to the insert. NCR is made for official approval.

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

11. INSTALLATION OF **PREHEATER** ONTO THE TTCB BASE PLATE

11.1 Prepare the TTCS PREHEATER for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

11.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

11.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

11.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1352N04-LB6 x8	4.91
Washer	
NAS1149FN432R (7ea)	1.96 g

JCH Jason

SCALE

11.5 PN AJ-69007 M# _____ Cal Date 08/14/2008. JCH Jason

3201287.

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
11.6	WARNING: for TTCB installation reference drawings are as stated at the start of this ATS. Verify before use the availability of the approved drawing revision		
11.6.1	Check the bill of material in the assembly drawing.		
11.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN ST-700/910-704 Lot# 370655 Exp. Date 6/09	JCH	Jason
11.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

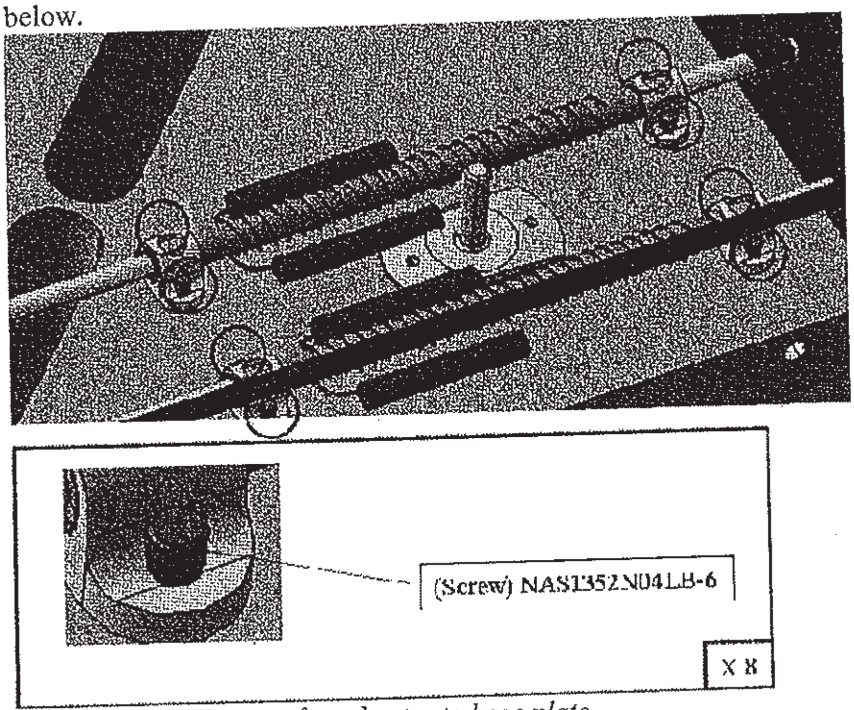

Figure 4: Installation of pre-heater to base plate

11.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN ______ Lot# 135999 Exp. Date 060208. 60177-2012-AMSB	JCH	Jason
11.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT		

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	_____ LOT#_____		
	_____ LOT#_____		
	_____ LOT#_____		
	_____ LOT#_____		
	_____ LOT# _____		
Bolt	NAS1352N04LB-6 LOT# 85736	JCH	Jason
	_____ LOT#_____		
Washer	NAS1149FN432R LOT# 9543-11/15/07		
	_____ LOT#_____		

11.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N04LB-6	7.459	6.34

11.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between 0.5– 5 inch*lbf (size 0.112)
Locking on bolt not as no insert is present.

11.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.

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4. ATS NO. ATS 090127-1-R0

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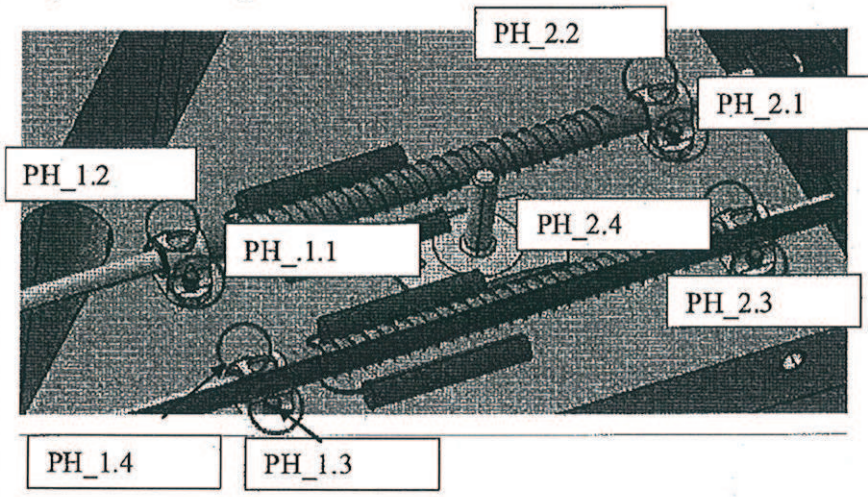
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)
PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Torque Wrench- Final Torque
PN XQRC0006 M# _____ Cal Due Date 09/03/2009

Bolt indication (see figure above)	Locking Torque	Final Torque		
* PH_2.3 (add washer)	3	10	JCH	Jason
* PH_2.4 (add washer)	1	8	JCH	Jason
* PH_1.3 (add washer)	1	8	JCH	Jason
PH_1.4	1	8	JCH	Jason
* PH_2.1 (add washer)	1	8	JCH	Jason
* PH_2.2 (add washer)	1	8	JCH	Jason
* PH_1.1 (add washer)	1	8	JCH	Jason
* PH_1.2 (add washer)	2	9	JCH	Jason

Bolt indication (see figure above) **Locking Torque** **Final Torque**

* see next page

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
11.11	**End of online operation Pre-heater TTCB-P**		
	* Pre-heater was not according to specification. The distance between brackets (and therefore holes) was slightly off. The holes in the base plate are enlarged and flight washers added to allow for enough contact surface.		
	Rationale.		
	Pre-heater brackets are non-structural (not needed). The washer solution has been discussed with JSC/NASA. NCR is in progress.		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

12. INSTALLATION OF **COLD ORBIT HEATER** ONTO THE TTCB BASE PLATE

12.1 Prepare the TTCS Cold orbit heater primary for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

12.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

12.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

12.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1352N08-10 x4	8.79 g
Washer	
NAS1149FN832R x4	1.49 g.

JCH Jason

12.5 SCALE PN AJ-62006 320107-7. M# _____ Cal Date 08/14/2008

JCH Jason

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
12.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
12.6.1	Check the bill of material in the assembly drawing.		
12.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 5H-700/910-704 Lot# 370655 Exp. Date 6/09	JCH	Jason
12.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

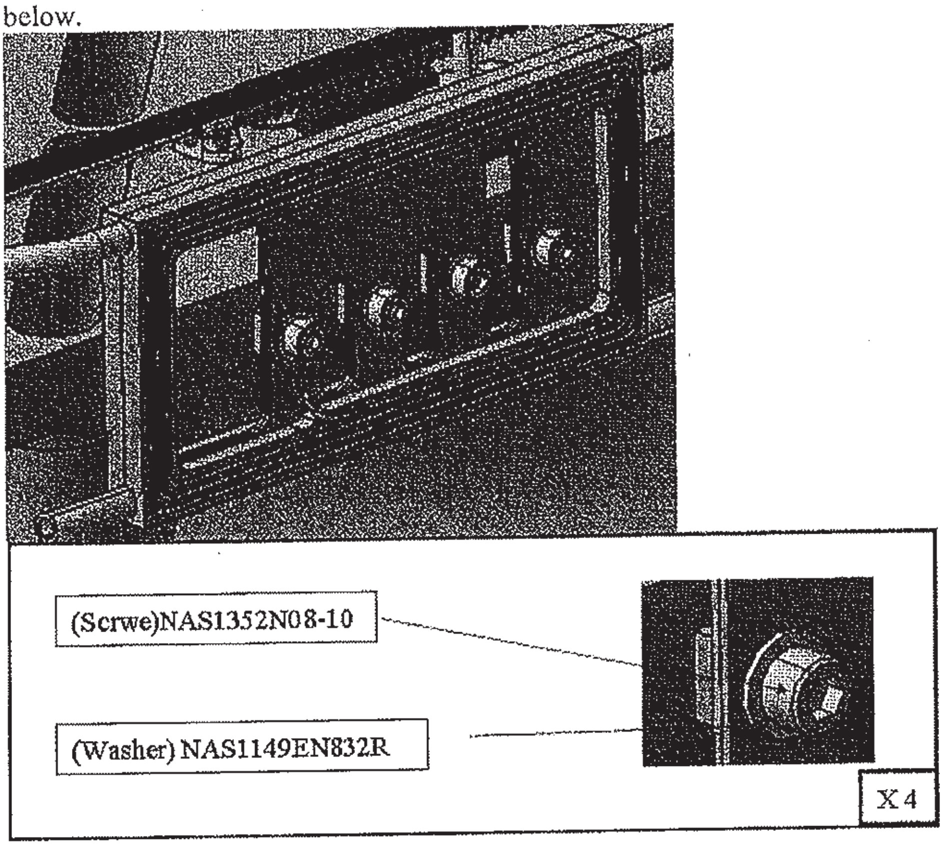

Figure 4: Installation of Cold orbit heater to base plate

12.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF22012-AMSB Lot# B5999 Exp. Date 06-02-08	JCH	Jason

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
12.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ Bolt NAS1352N08-10 LOT# 19607 _____ _____ LOT#_____ Washer NAS1149FN832R LOT# 8714-10-9-03 _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____	JCH	Jason
12.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table		
12.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1.5– 15 inch*lbf**.		
12.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N08-10	24.944	21.203

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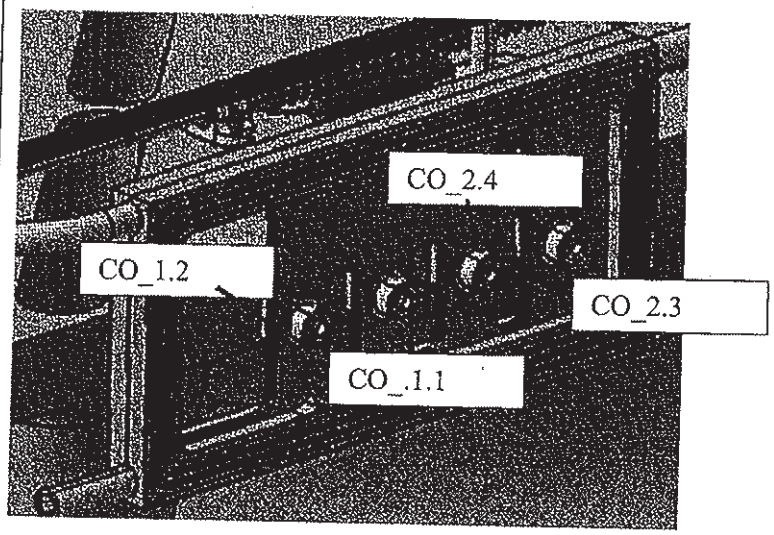
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. Q/A/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQU1C0112 M# _____ Cal Due Date ~~08/14/2008~~ 08/14/2008

Torque Wrench- Final Torque

PN XQRC0213 M# _____ Cal Due Date 08/15/2008

Bolt indication (see figure above)	Locking Torque	Final Torque		
CO_2.3	10	23+10=33	JCH	Jason
CO_2.4	13	36	JCH	Jason
CO_1.1	11	34	JCH	Jason
CO_1.2	12	35	JCH	Jason

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
12.11	**End of online operation cold orbit heater**		

Flight installation on Flight radiator
see Addendum II. p56-p60

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
13.	INSTALLATION OF **PUMPS** ONTO THE TTCB DUMMY RADIATOR PLATE		
13.1	Prepare the TTCS PUMP for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
13.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
13.3	Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol		
13.4	Weight all the hardware to be installed, including fasteners. Record the weight	JCH	Jason

ITEM	WEIGHT
Bolt NAS1352N06-10 x8	11.22 g
Washer NAS1149EN+32R x8	4.48 g
Nut NAS1291C06M x8	2.88 g

13.5	SCALE PN AJ-4200E 3701 0737 M# ______ Cal Date 08/14/2008	JCH	Jason

p 56 - p 60 See Addendum II

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
13.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
13.6.1	Check the bill of material in the assembly drawing.		
13.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 44-100910-704 Lot# 3706KS Exp. Date 4/09.	JCH	Jason
13.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

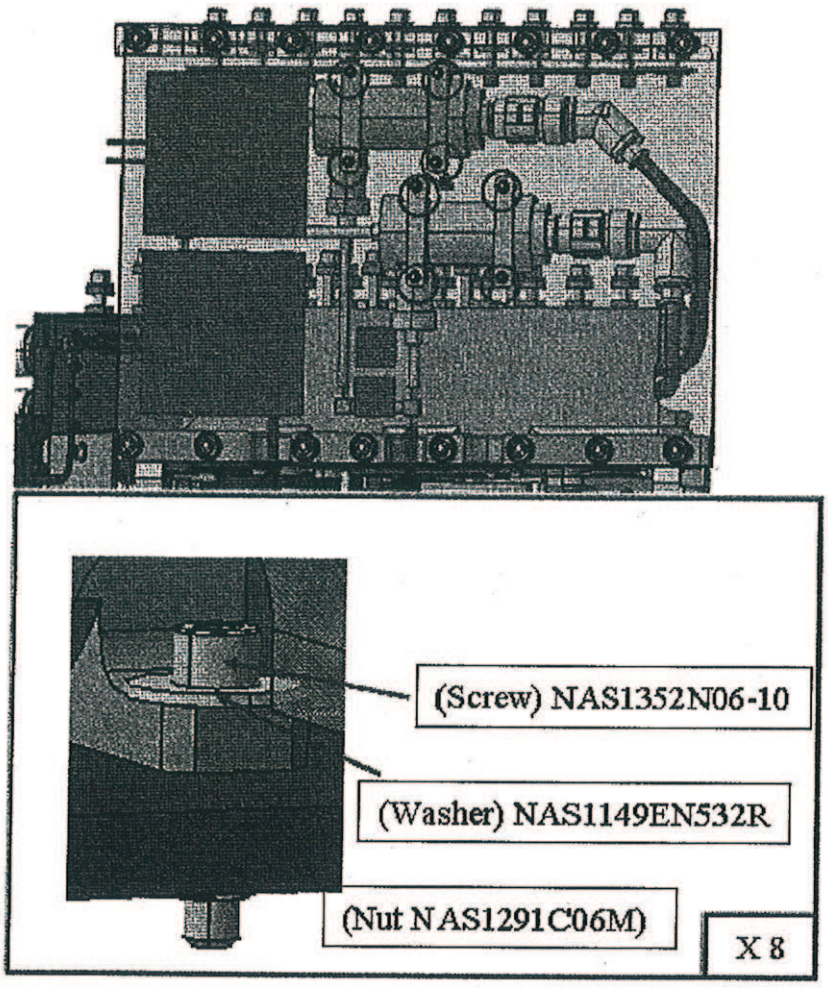

Figure 4: Installation of pumps to the dummy radiator base plate

p56-p60 See addendum II.

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
13.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN ~~601EE2012~~ 60127 3012-AMSB Lot# 135999 Exp. Date 06 02 08.	JLH	Jason
13.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT ___ ___ LOT#___ ___ ___ LOT#___ Bolt NAS1352N06-10 LOT# 85478 ___ ___ LOT#___ Washer NAS1149EN632R LOT# V0053 ___ ___ LOT#___ Nut NAS1291C06M LOT# 94341 ___ ___ LOT#___ ___ ___ LOT#___	JLH	Jason
13.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
13.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.		
13.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Table (step 13.8):

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-10	13.861	11.782

p 56-p60 See Addendum II.

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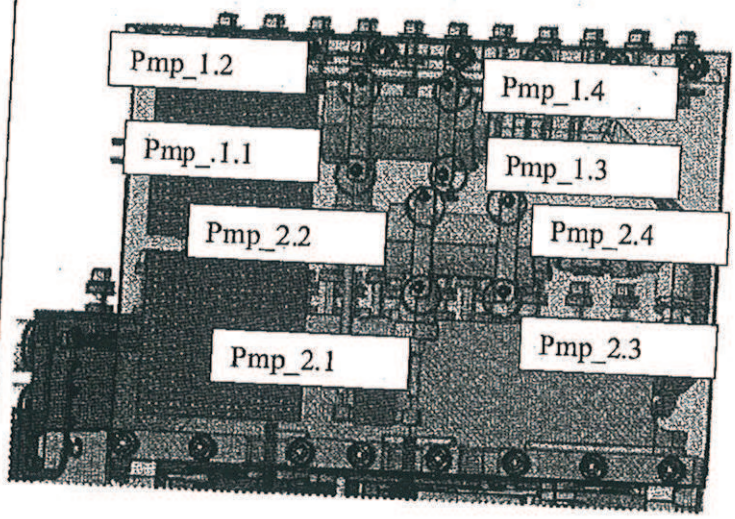
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)
PN XQAA0309 M# _____ Cal Due Date 06/22/2009 JCH Jason

Torque Wrench- Final Torque
PN XQAA0309 M# _____ Cal Due Date 06/22/2009

Bolt indication (see figure above)	Locking Torque	Final Torque	
pmp_2.3	9	18 15 50% seating torque	JCH Jason
pmp_2.1	6	12	JCH Jason
pmp_2.4	6	12	JCH Jason
pmp_2.2	6	12	JCH Jason
pmp_1.1	9	15	JCH Jason
pmp_1.2	7	13	JCH Jason
pmp_1.3	7	13	JCH Jason
pmp_1.4	10	16	JCH Jason
		↓ 50% seating torque	

p36 – p60 See also Addendum II.

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4. ATS NO. ATS 090127-1-R0
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
13.11	**End of online operation pumps**		

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

14. INSTALLATION OF **CONNECTOR PLATE TO BOX COVER**

14.1 Prepare the CONNECTRO PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

14.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

14.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

14.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolts (NAS1352N06LB-8) x10EA	17.2 g
Washer (NAS1149EN532R) x10EA	1.6 g

JCH Jason

SCALE

14.5 PN AJ-42002 3301075 M# _____ Cal Date 08/14/2008

JCH Jason

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4. ATS NO.	ATS 090127-1-R0
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
14.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
14.6.1	Check the bill of material in the assembly drawing.		
14.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 44-700/910-704 Lot# 370644 Exp. Date 4/09	JCH	Jason
14.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

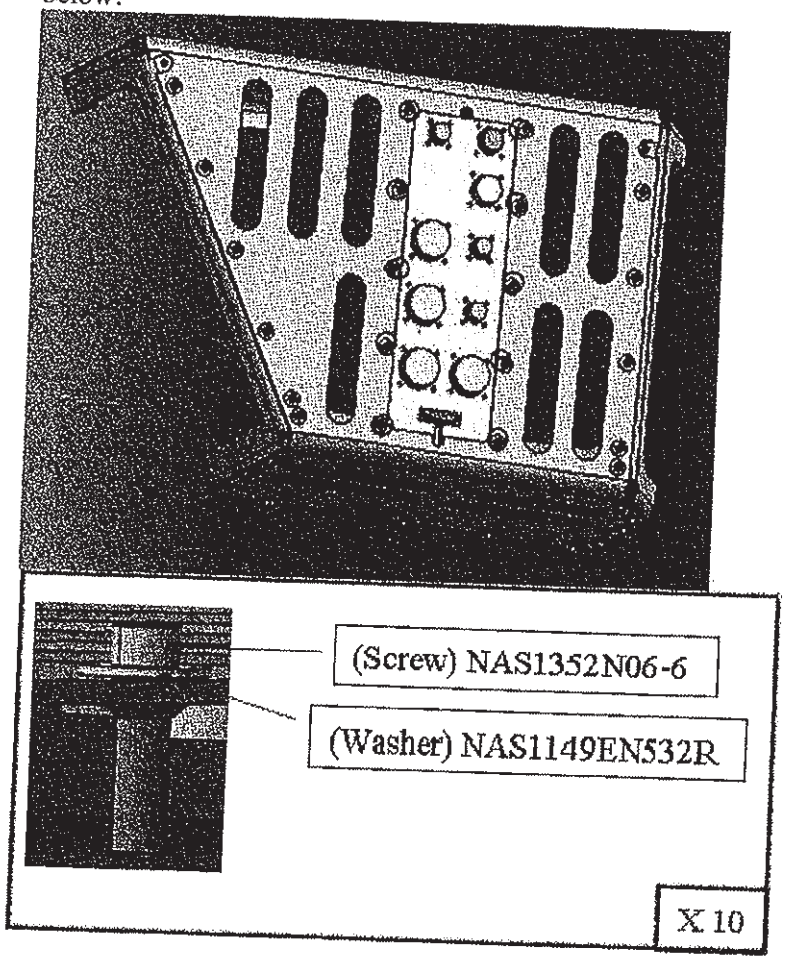

Figure 4: Installation of connector plate to cover

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
14.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601ZF-3501-2-AMSB Lot# 135999 Exp. Date 06 02 08	JCH	Jason
14.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT Bolt — NAS1352N06LB-8 — LOT# No information Avanti invoice 90266. Washer — NAS1149FN532R — LOT# U0053	JCH	Jason
14.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
14.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1– 10 inch*lbf (size 0.138).**		
14.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

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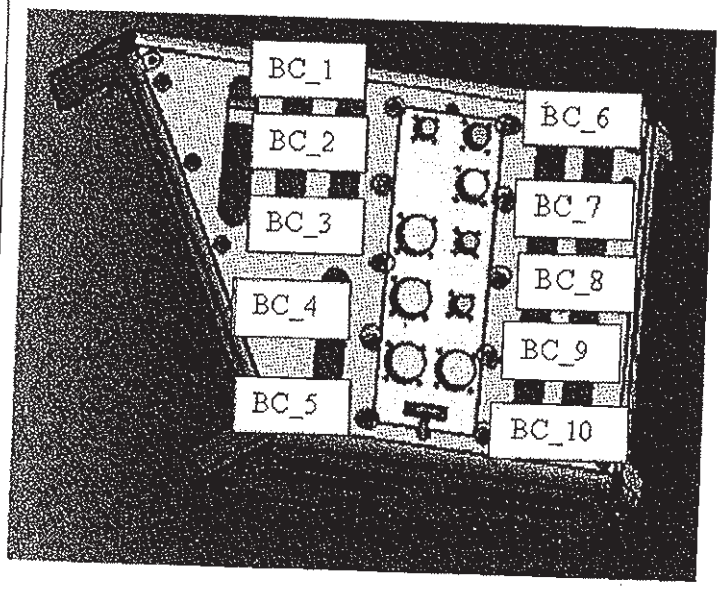
4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Torque Wrench- Final Torque

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
BC_1	1.5	13.5	JCH	Jason
_2	1.5	13.5	JCH	Jason
_3	1	13	JCH	Jason
_4	1	13	JCH	Jason
_5	7	19	JCH	Jason
_6	1.5	13.5	JCH	Jason
_7	1	13	JCH	Jason
_8	1	13	JCH	Jason

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	BC 9	1	13	JCH	Jason
	-10	1.5	13.5	JCH	Jason
14.11	**End of online operation cover and connector plate**				

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

15. INSTALLATION OF **Cover to CoverRibs (PPBOX & PPfront &PPback)**

15.1 Prepare the Cover and Cover ribs for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

15.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

15.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

15.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
(NAS1352N06LB-8) x 25EA	30.5 g
Washer	
(NAS1149EN532R) x 25EA	14.0 g

JCH Jason

SCALE

15.5 PN AJ-42006E / 3201757 M# _____ Cal Date 08/14/2008

JCH Jason

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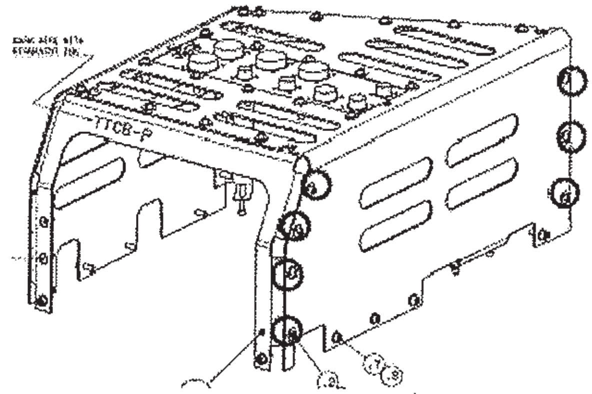
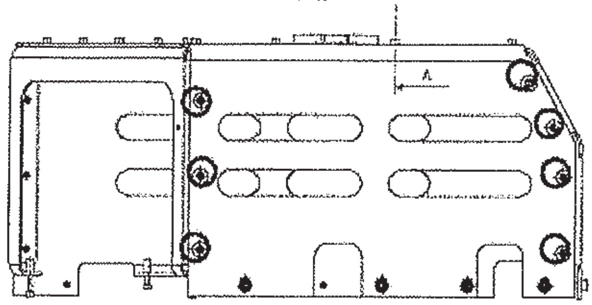
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
15.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
15.6.1	Check the bill of material in the assembly drawing.		
15.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN flt-700/910-704 Lot# ~~370611~~ 370611 Exp. Date 4/09	JCH	Jason
15.6.3	Install the indicated components as shown in the figure below.		





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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

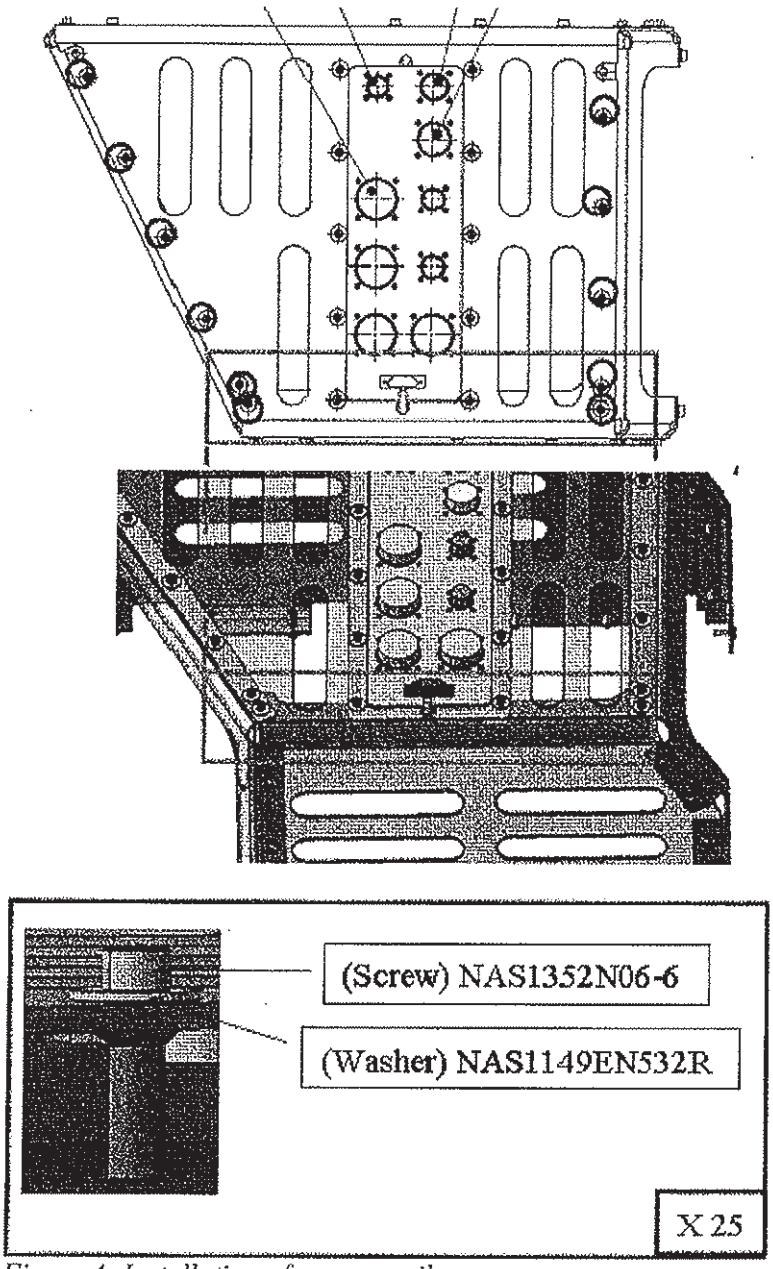

Figure 4: Installation of cover on ribs

15.6.4 Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). JCH Jason

Braycote Grease - PN 60EF-250-2-AMSB Lot# 135999 Exp. Date 060208

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
15.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand)	JCH	Jason

Bolt/washer/nut and number — NAS number — LOT

Bolt	NAS1352N06LB-8	LOT# No information
		LOT# Avanti invoice 90266
Washer	NAS1149EN532R	LOT# U0053
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#

15.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

15.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138).**

15.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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4. ATS NO.	ATS 090127-1-R0
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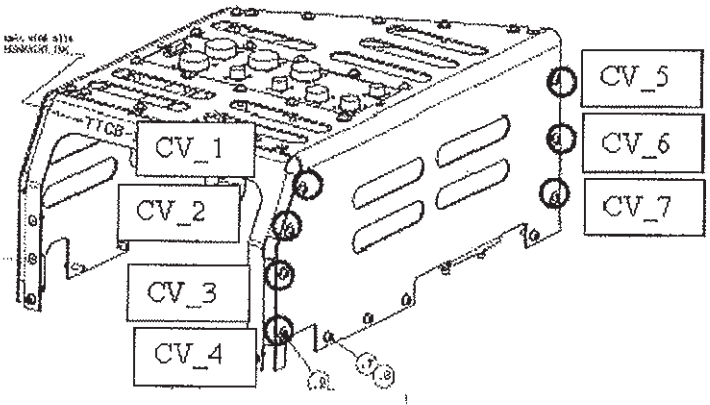
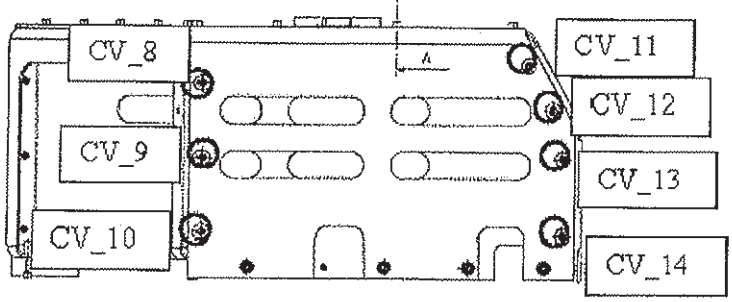
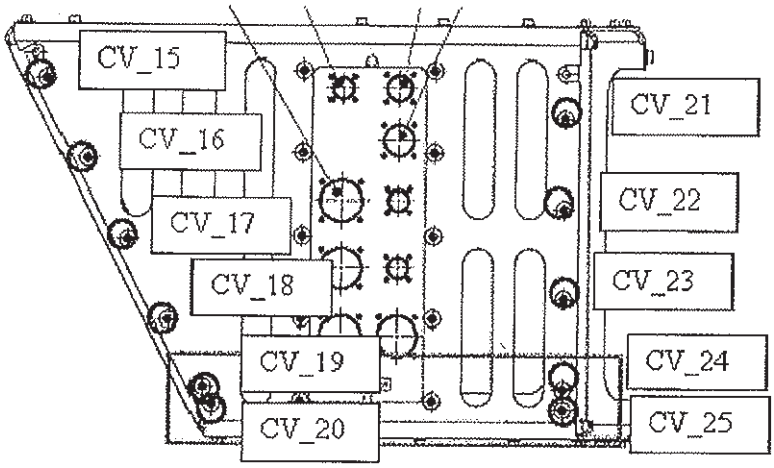
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV







Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 | JCH | Jason

Torque Wrench- Final Torque

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 | JCH | Jason

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	CV-1	3.5	15.5	JCH	Jason
	CV-2	3	15	JCH	Jason
	CV-3	3	15	JCH	Jason
	CV-4	3	15	JCH	Jason
	CV-5	2	14.5	JCH	Jason
	CV-6	1.5	13.	JCH	Jason
	CV-7	1.5	13.5	JCH	Jason
	CV-8	2	14	JCH	Jason
	CV-9	3	15	JCH	Jason
	CV-10	4	16	JCH	Jason
	CV-11	3	15	JCH	Jason
	CV-12	4	16	JCH	Jason
	CV-13	3	15	JCH	Jason
	CV-14	3	15	JCH	Jason
	CV-15	1.5	13.5	JCH	Jason
	CV-16	1.5	13.5	JCH	Jason
	CV-17	2	14	JCH	Jason
	CV-18	2	14	JCH	Jason
	CV-19	1	13	JCH	Jason
	CV-20	3	15	JCH	Jason
	CV-21	2.5	14.5	JCH	Jason
	CV-22	2.5	14.5	JCH	Jason

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	CV_23	2.5	16.5	JCH	Jason
	CV_24	1.5	13.5	JCH	Jason
	CV_25	3	15	JCH	Jason
	End of online operation cover to ribs installation				

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

16. INSTALLATION OF **FRONT COVER RIB TO BASE PLATE**

16.1 Prepare the FRONT COVER RIB for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

16.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

16.3 Perform a visual inspection of the BASE PLATE check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

16.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1352N08-8 x2	3.76 g
Washer	
~~NAS1149EN832R~~	
NAS1149EN832R x2	0.72 g

JCH Jason

SCALE

16.5 PN AJ-4200E 3201757 M# _____ Cal Date 08/14/2008

JCH Jason

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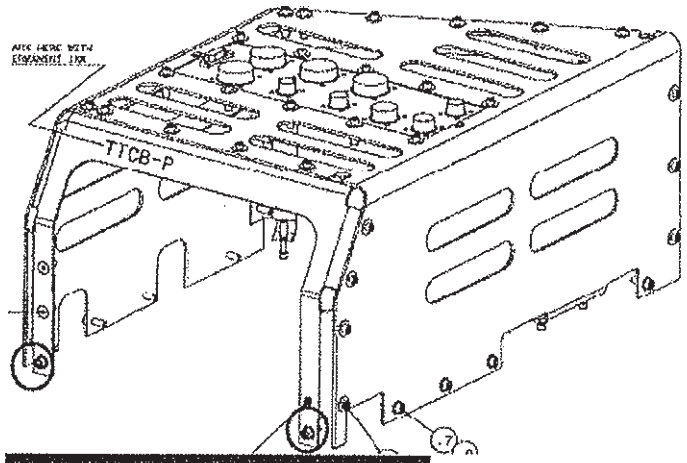
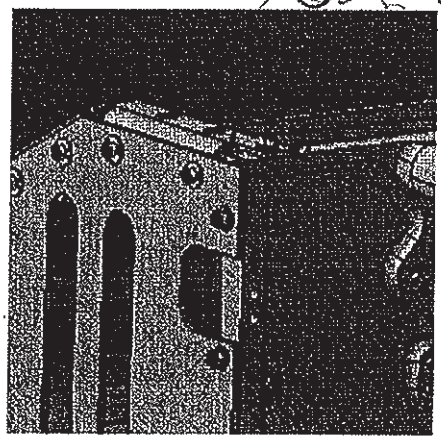
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
16.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
16.6.1	Check the bill of material in the assembly drawing.		
16.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 44-700/910-704 Lot# 3706KK Exp. Date 4/09	JCH	Jason
16.6.3	Install the indicated components as shown in the figure below.		





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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

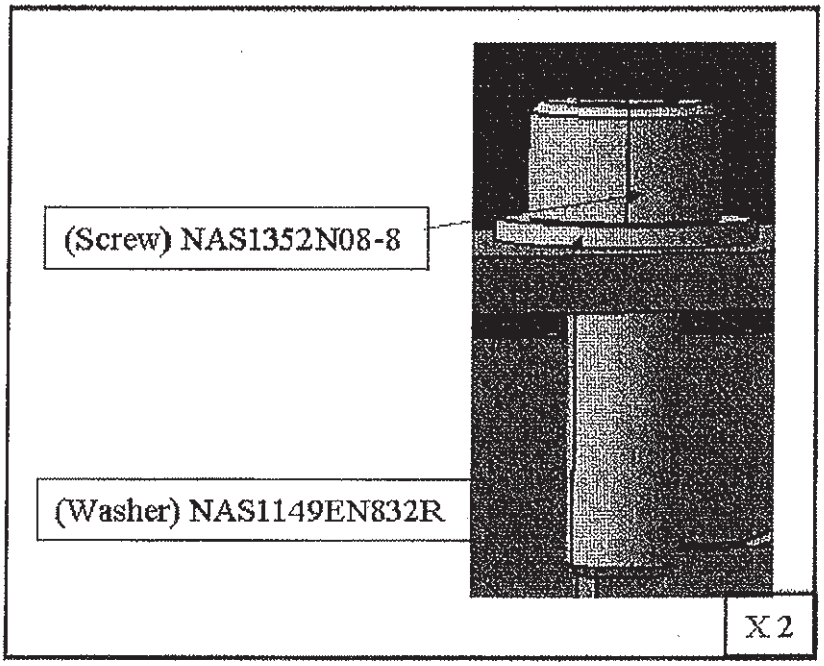

Figure 4: Connection of Front cover rib to base plate

16.6.4 Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN 60TEF-2602-AMSB Lot# 135999 Exp. Date 060208 — JCH — Jason

16.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number	NAS number	LOT			
		LOT#			
		LOT#			
Bolt	NAS1352N08-8	LOT#	84030	JCH	Jason
Washer	NAS1149EN832R	LOT#	8714-10-9-03		
		LOT#			
		LOT#			
		LOT#			

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

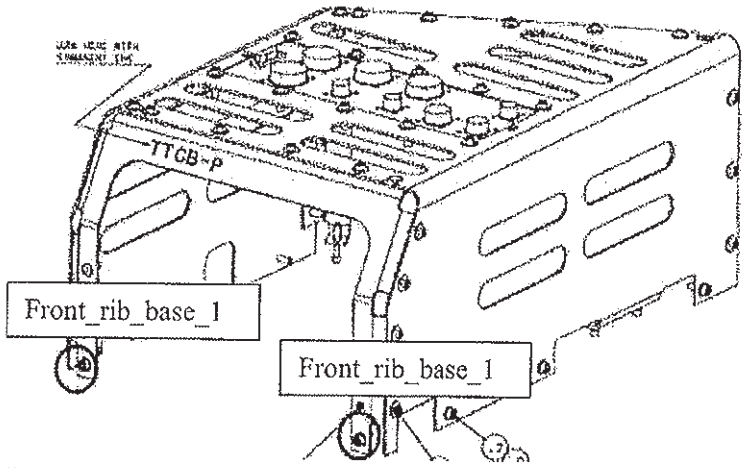
16.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N08-8	24.944	21.203

16.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1.5 – 15 inch*lbf (size 0.164).**

16.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN X2WC0112 M# _____ Cal Due Date 08/15/2009 JCH Jason

Torque Wrench- Final Torque

PN X2RC0013 M# _____ Cal Due Date 08/15/2008

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque Front_base_1 13 3-6 Front_base_2 13 36	JCH	Jason
16.11	**End of online operation cover to front cover rib to base plate**		

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

17. INSTALLATION OF **Cover to Base plate rivnuts 1**

17.1 Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

17.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

17.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

17.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
(NAS1352N06LB-8) x 2EA	7.44 g

JCH | Jason

SCALE

17.5 PN AJ-4500E M# _____ Cal Date 08/14/2008

JCH | Jason

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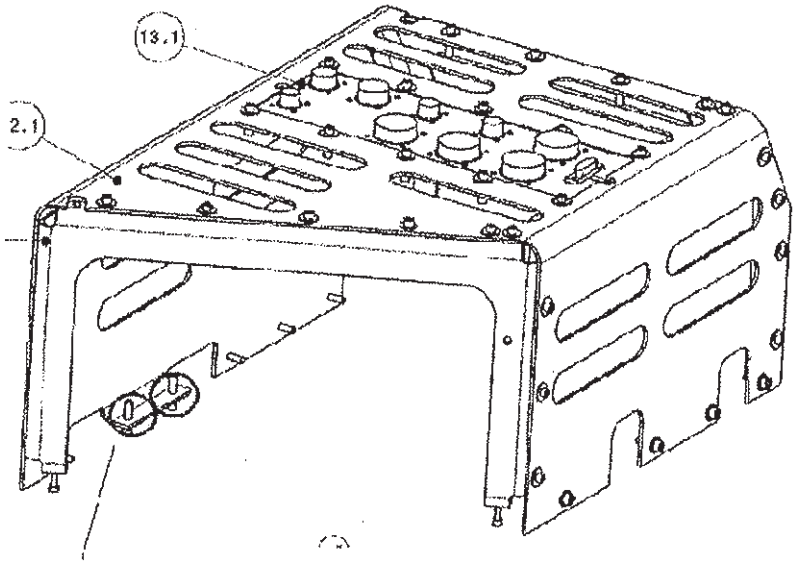
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
17.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
17.6.1	Check the bill of material in the assembly drawing.		
17.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 45-700/910-704 Lot# 370655 Exp. Date 6/09	JCH	Jason
17.6.3	Install the indicated components as shown in the figure below.		



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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

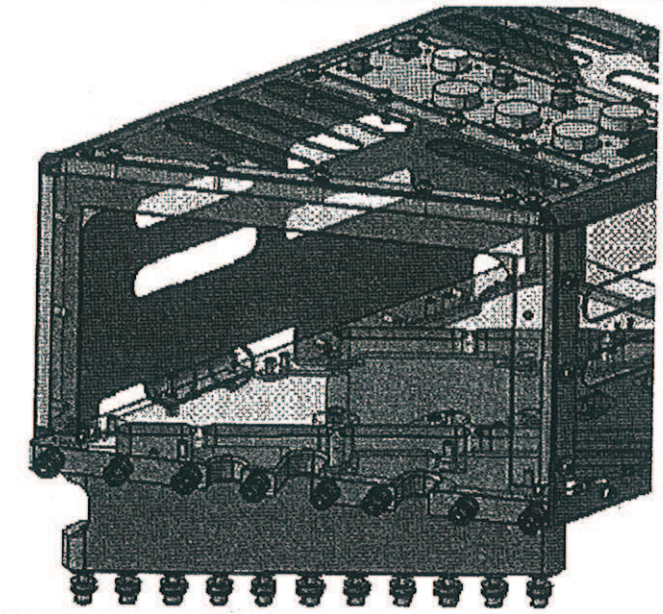

Figure 4: Connection of cover to base plate

17.6.4 Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN 6017F-4012-AMSB Lot# 135999 Exp. Date 06/2008 — JCH — Jason

17.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number	NAS number	LOT		
Bolts	~~NAS1352N06-6~~ NAS1352N06LB-8	LOT# No Information Avanti invoice	JCH	Jason

90266

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/QV
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		

17.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

17.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

17.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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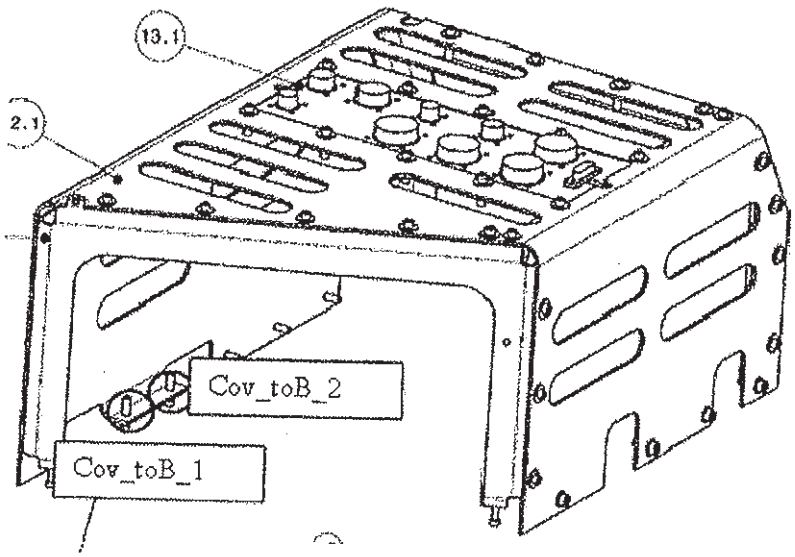
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Torque Wrench- Final Torque

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
Cov-toB_1	4	~~13~~ 16	JCH	Jason
Cov_toB_2	5	~~14~~ 17	JCH	Jason

17.11 **End of online operation cover to base plate rivnuts**

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

18. INSTALLATION OF **Cover Rib to Base plate rivnuts 2**

18.1 Prepare the Rib for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

18.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

18.3 Perform a visual inspection of the base plate check the cleanliness of all the holes. If necessary clean them with Isopropyl Alcohol

18.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1352N06LB-12 (bea)	3.18 g

SCALE

18.5 PN AJ-4007 320/0757 M# _____ Cal Date 08/14/2008

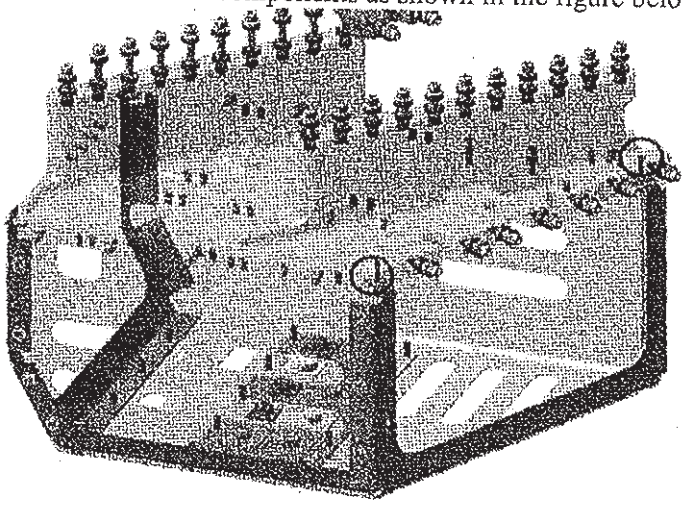
JCH Jason

JCH Jason

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
18.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
18.6.1	Check the bill of material in the assembly drawing.		
18.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 615-700/910-704 Lot# 370655 Exp. Date 4/09	JCH	Jason
18.6.3	Install the indicated components as shown in the figure below.		



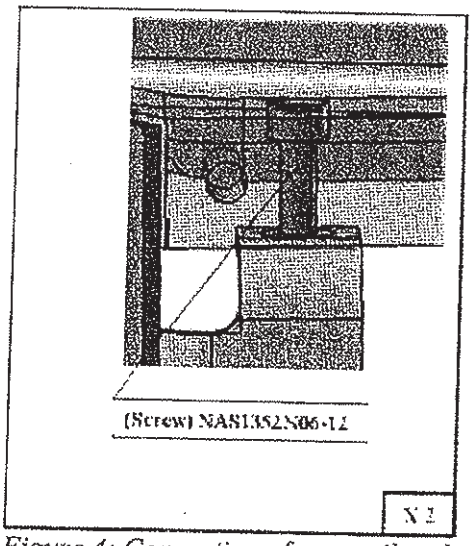


Figure 4: Connection of cover rib to base plate

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
18.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 6167-2602-AMSB Lot# 135999 Exp. Date 6/02/08	JCH	Jason
18.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ Bolt NAS1352N06LB-12 LOT# 2K500 _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____	JCH	Jason
18.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
18.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.		
18.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-12	13.861	11.782

AMS-02 TASK SHEET (ATS)
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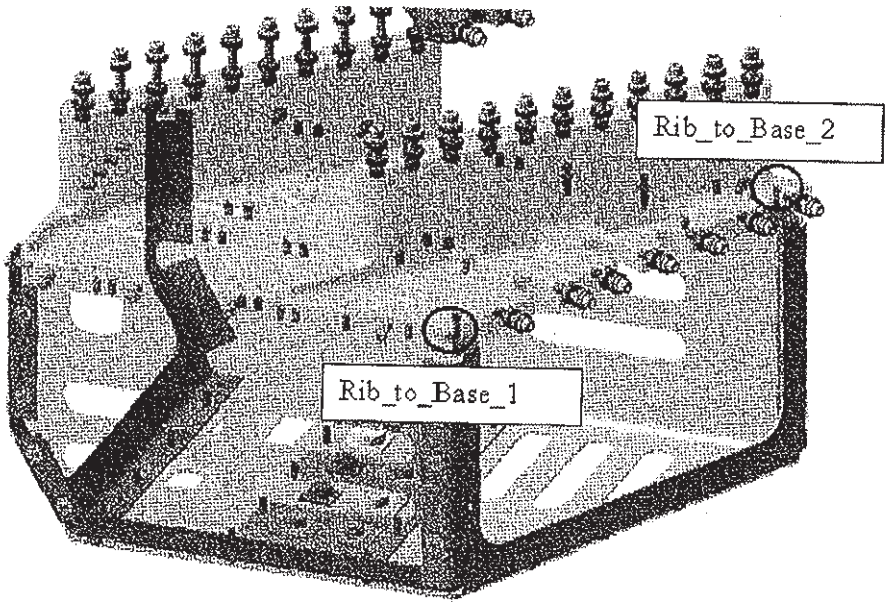
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 04/30/2009 JCH Jason

Torque Wrench- Final Torque

PN ~~XQRC~~ XQRC0006 M# _____ Cal Due Date 09/03/2009

Bolt indication (see figure above)	Locking Torque	Final Torque		
Rib_to_base_1	1	16	JCH	Jason
Rib_to_base_2	2	15	JCH	Jason

End of online operation cover to base plate rivnuts 2

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

Auxiliary tool

19. INSTALLATION OF **TEMPORARY INSTALLATION TOOL TO COVER**

19.1 Prepare the Cover and auxilary tool for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

19.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

19.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

19.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

19.5 PN _____ M# _____ Cal Date _____

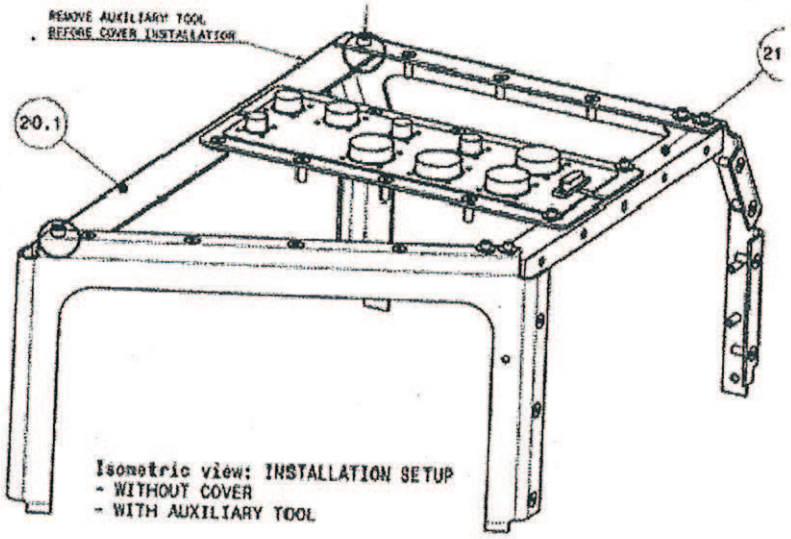
For Secondary box it was decided not to use the auxiliary bracket ⇒ Not installed.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
19.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
19.6.1	Check the bill of material in the assembly drawing.		
19.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
19.6.3	Install the indicated components as shown in the figure below.		



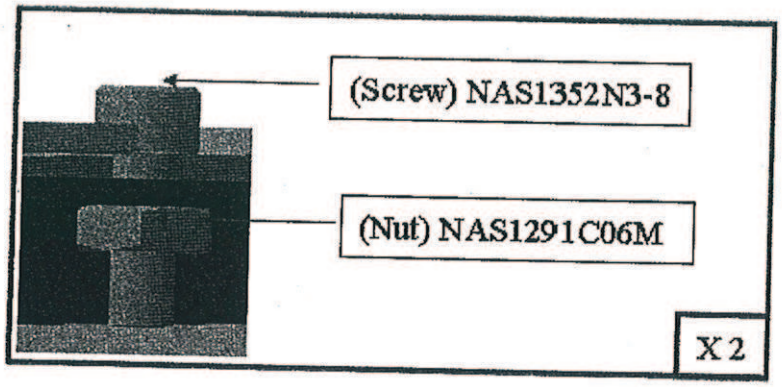


Figure 4: Connection of auxiliary tool to cover

Installation tool not installed

AMS-02 TASK SHEET (ATS)
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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

19.6.4 Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

19.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

Installation tool not installed

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

19.8 Torque the fasteners installed in the former step to the following torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

19.9 Check this value with the table at the end of this ATS.
As this is a temporary screw and a nut without locking feature.
The Locking torque shall be approx **0-5 inch*lbf (size 0.138).**

19.10 Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

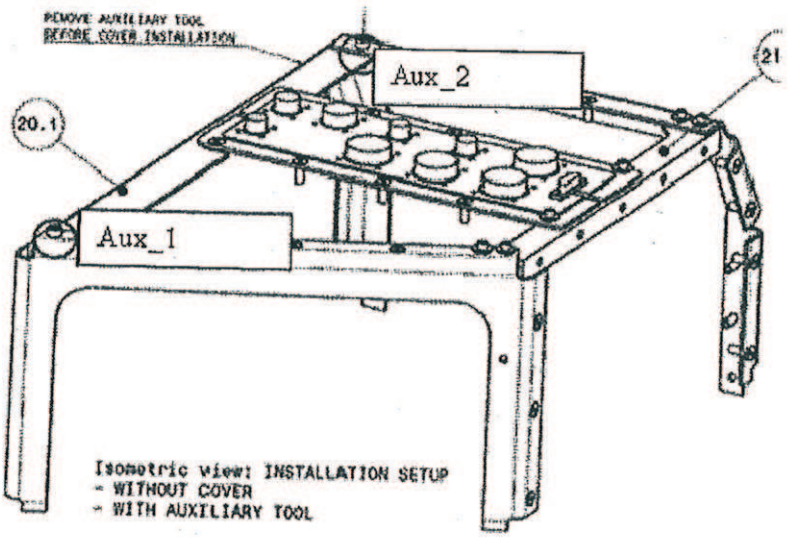
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____



Bolt indication (see figure above) Locking Torque Final Torque

Installation tool not installed.

19.11 **End of online operation auxiliary tool to cover**

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
20.	INSTALLATION OF **Cover to Base plate inserts**		
20.1	Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
20.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
20.3	Perform a visual inspection of the base plate check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol		
20.4	Weight all the hardware to be installed, including fasteners. Record the weight		

ITEM	WEIGHT
Bolt	
NAS1352N08-8 x8	4.04 g
Washer	
NAS1149EN832R x8	3.00 g

JCH Jason

SCALE

20.5 PN AJ-4002E 3001075 M# _____ Cal Date 08/14/2008 — JCH Jason

20.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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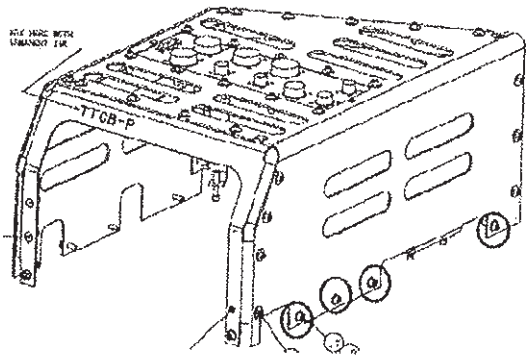
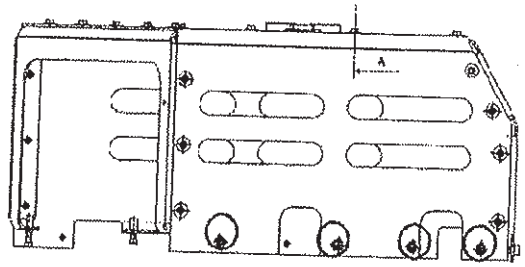
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
20.6.1	Check the bill of material in the assembly drawing.		
20.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 515-700/910-706 Lot# 370655 Exp. Date 4/09	JCH	Jason
20.6.3	Install the indicated components as shown in the figure below.		





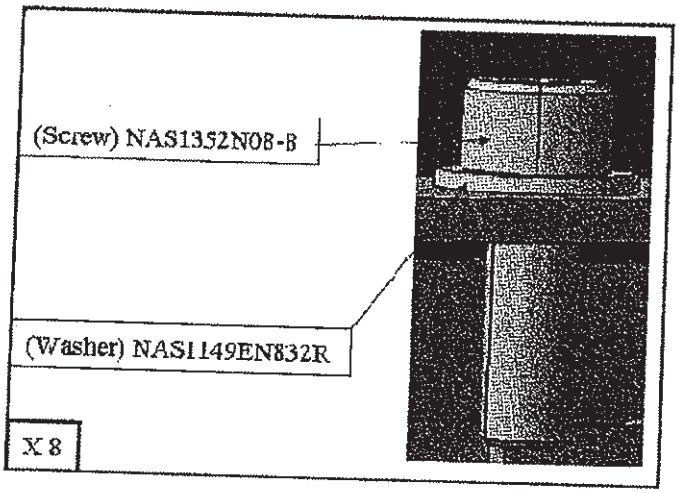


Figure 4: Connection of cover to base plate inserts

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	22. TECH	23. QA/DV
20.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 60177-2306-AMSB Lot# 138999 Exp. Date 060208	JCH	Jason
20.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number — NAS number — LOT ____ ____ LOT#____ ____ ____ LOT#____ Bolt NAS1352N08-8 LOT# 84030 ____ ____ LOT#____ Washer NAS1149ZN832R LOT# 8714-10-9-03 ____ ____ LOT#____ ____ ____ LOT#____ ____ ____ LOT#____ ____ ____ LOT#____	JCH	Jason
20.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N08-8	24.944	21.203

20.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1.5-15 inch*lbf (size 0.164)**.		
20.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

AMS-02 TASK SHEET (ATS)
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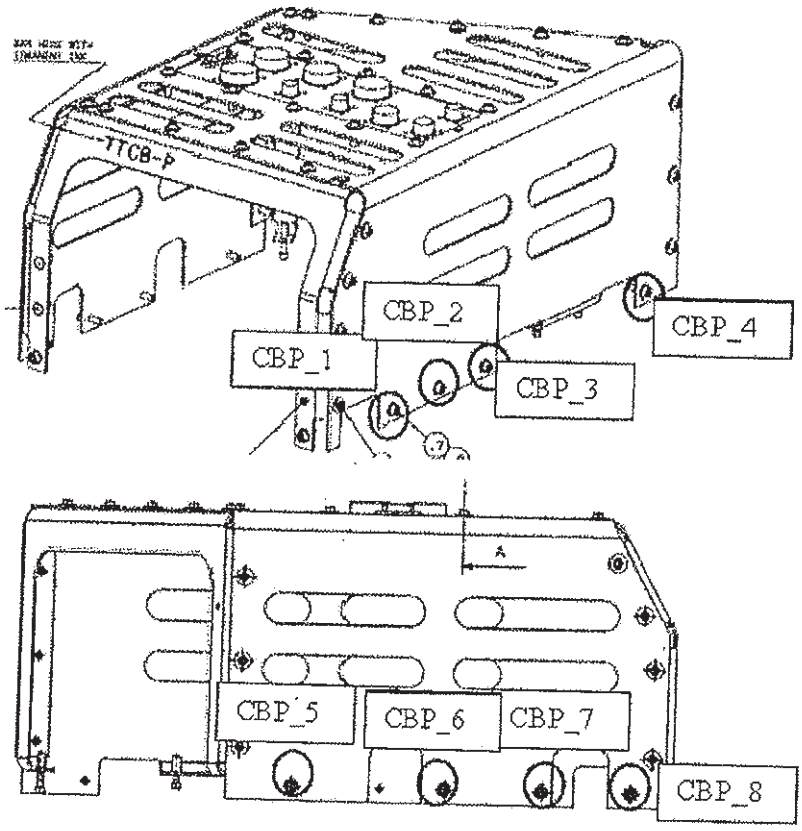
4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Torque Wrench- Final Torque

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
CBP_1	8	31.5	JCH	Jason
CBP_2	9.5	33	JCH	Jason
CBP_3	8.5	31.5	JCH	Jason

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4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Bolt indication (see figure above) Locking Torque Final Torque

CBP_4	8	32	JCH	Jason
CBP_5	8	32	JCH	Jason
CBP_6	7.5	30.5	JCH	Jason
CBP_7	9	32	JCH	Jason
CBP_8	9	32	JCH	Jason

20.11 End of online operation cover to base plate inserts installation

Pg6- P100 See Also Addendum III.

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	5. Page 96 of 116
	4. ATS NO. ATS 090127-1-R0
	6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
21.	INSTALLATION OF **BASE PLATE TO USS SIMULATOR**		
21.1	Prepare the BASE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
21.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
21.3	Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol		
21.4	Weight all the hardware to be installed, including fasteners. Record the weight	JCH	Jason
21.5	SCALE PN AJ-L2000E 320/0757 M# _____ Cal Date 08/14/2008	JCH	Jason

ITEM	WEIGHT
Bolts	
NAS1354N4-16 x 7	165.06 g
Washer	
NAS1587-4 x 7	27.34 g
Thermal Washer	
15.7 x 42	86.52 g.

pg6 - p100 see also Add III

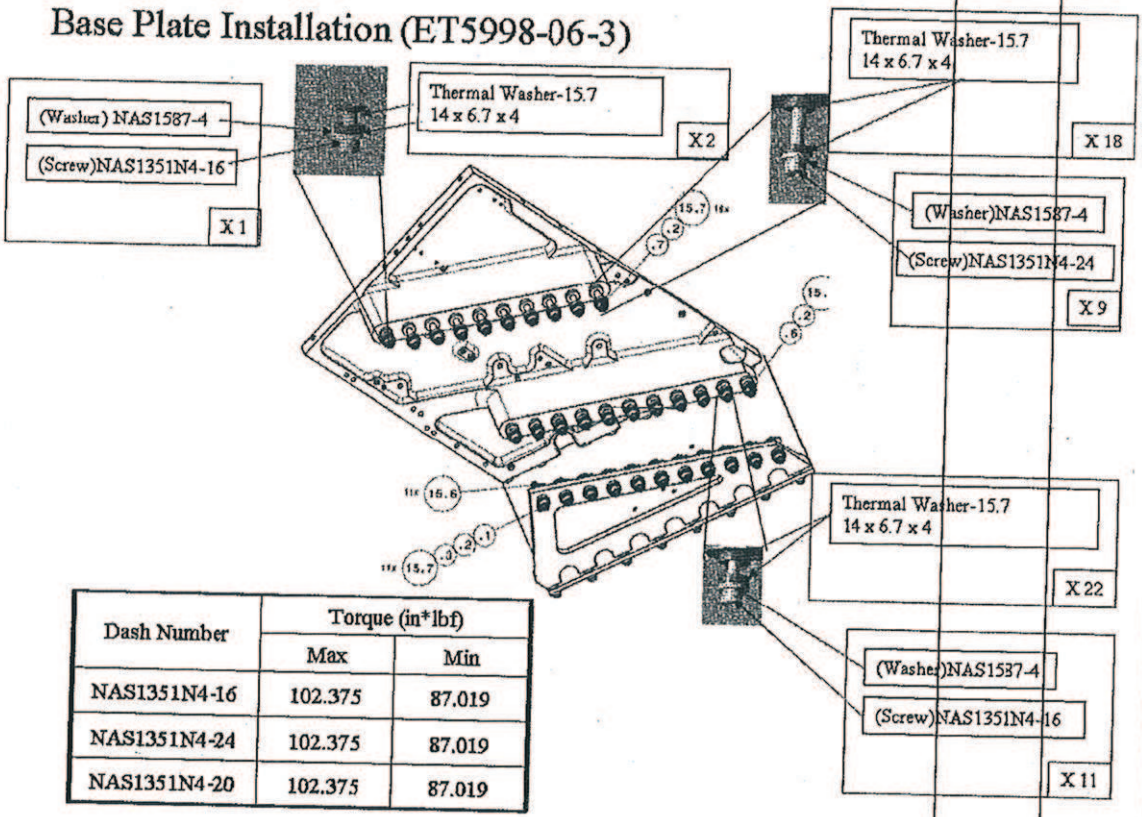
AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
21.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
21.6.1	Check the bill of material in the assembly drawing.		
21.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN 4H-700/910-704 Lot# 370655 Exp. Date 4/09	JCH	Jason
21.6.3	Install the indicated components as shown in the figure below.		

Base Plate Installation (ET5998-06-3)



Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Figure 4: Connection base plate to USS simulator

pg 6 - p100 see also Add III

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
21.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 60ET-250b-AMSB Lot# 135999 Exp. Date 060268	JCH	Jason
21.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) [redacted] Bolt/washer/nut and number — NAS number — LOT Bolt — NAS1351N4-16 LOT# 82184 Washer — NAS1587-4 LOT# 1391-7/1/03 Thermal Washer — Lt-7 LOT# made by NDC. Titanium. LOT# LOT# LOT# LOT# LOT#	JEH 10/11/2007	Jason
21.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
21.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **3.5-30 inch*lbf (size 0.250)**.		

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

pg6-p100 See also Add III

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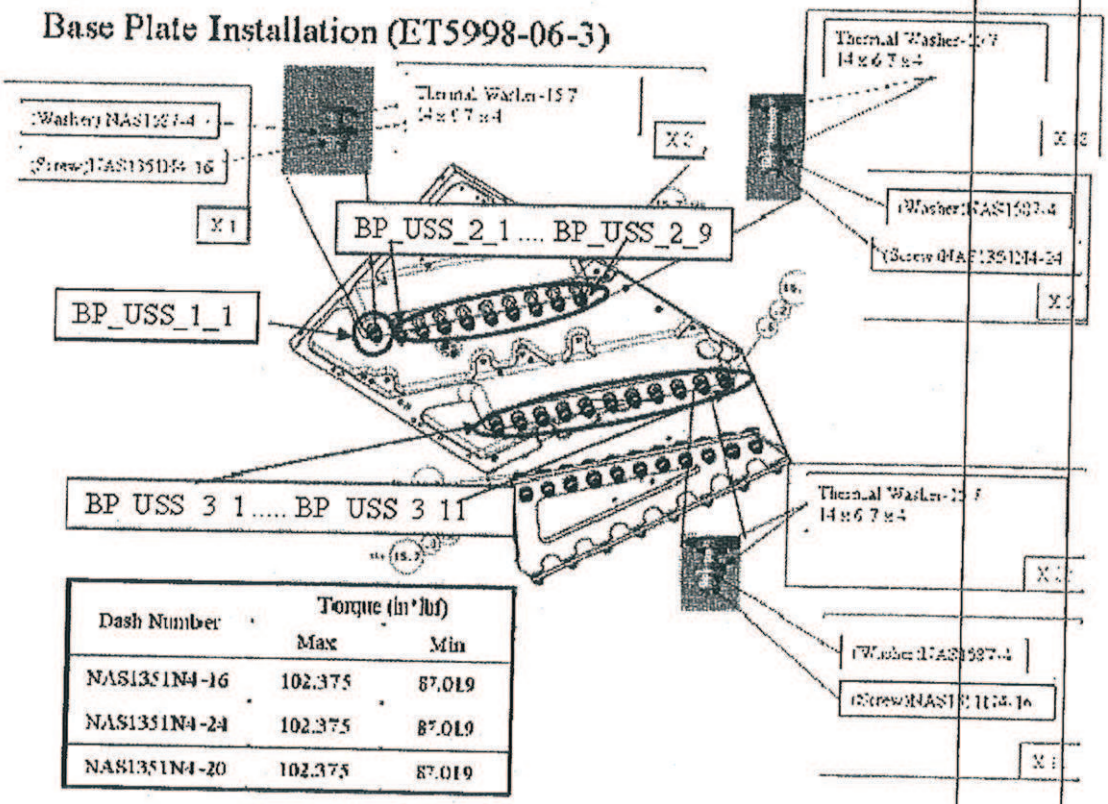
4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

21.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

Base Plate Installation (ET5998-06-3)



Dash Number	Torque (in*lbf) Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA03 09 M# _____ Cal Due Date 12/22/2008 JCH Jason

Torque Wrench- Final Torque

PN XQWC0112 M# _____ Cal Due Date 03/14/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
BP_USS_2_9	~~18~~ 19	109	JCH	Jason
BP_USS_2_8	23	113	JCH	Jason
BP_USS_2_7	25	115	JCH	Jason

pg6-p100 See also Addendum III

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	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	BP_USS_2_6	22	112	JCH	Jason
	BP_USS_2_5	22	112	JCH	Jason
	BP_USS_2_4	23	113	JCH	Jason
	BP_USS_2_3	26	116	JCH	Jason
	BP_USS_2_2	40	120	JCH	Jason
	BP_USS_2_1	28	118	JCH	Jason
	BP_USS_1_1	28	118	JCH	Jason
21.11	End of online operation base plate to USS				

P101-P105 See Addendum IV.

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5. Page 101 of 116
4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

22. INSTALLATION OF **SIDE PLATE TO USS SIMULATOR**

22.1 Prepare the SIDE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

22.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

22.3 Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

22.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1351N4-30 x11	100.76 g
~~Washer~~ Thermal Washer	
15.6 x 11	17.16 g
15.7 x 11	22.66 g
Nut	
NAS1789C4M	54.62 g

JCH Jason

SCALE

22.5 PN AJ-42002 / 3201757 M# _____ Cal Date 08/14/2008 JCH Jason

22.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

p 101 - p 105 See addendum IV

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	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
22.6.1	Check the bill of material in the assembly drawing.		
22.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. ±15-700/910-704 Koropron primer - PN _____ Lot# 370655 Exp. Date 04/9	JCH	Jason
22.6.3	Install the indicated components as shown in the figure below.		

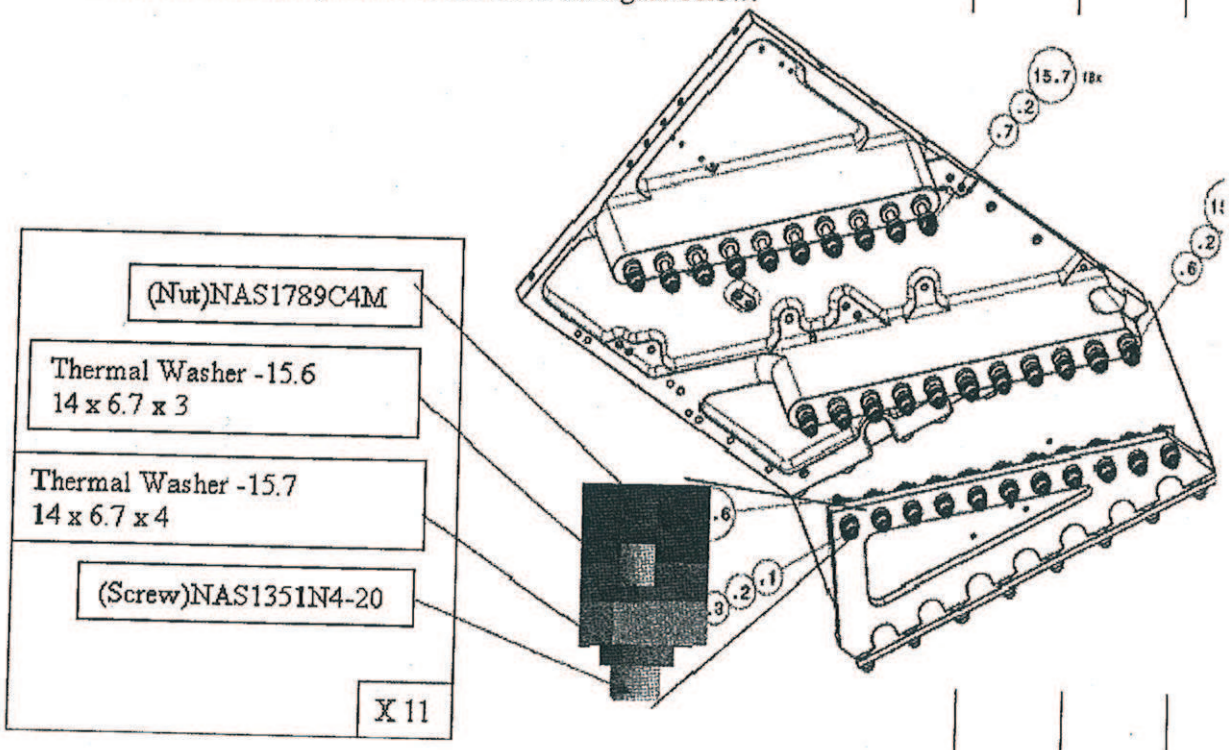

Figure 4: Connection side plate to USS simulator

22.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF2501-2-AMSB Lot# 135999 Exp. Date 06 02 08	JCH	Jason

p101 - p105 See Addendum IV.

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	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
22.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) [redacted]	JcH	Jason

Bolt/washer/nut and number — NAS number — LOT

Bolt	NAS1351N4-20	LOT# 81883
Thermal Washer	15.6	LOT#
Thermal Washer	15.7	LOT#
Nut	NAS1789C4M	LOT# 18421
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#

22.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-20	102.375	87.019

22.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **3.5-30 inch*lbf (size 0.250)**.

22.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.

p101 - p105 See addendum IV.

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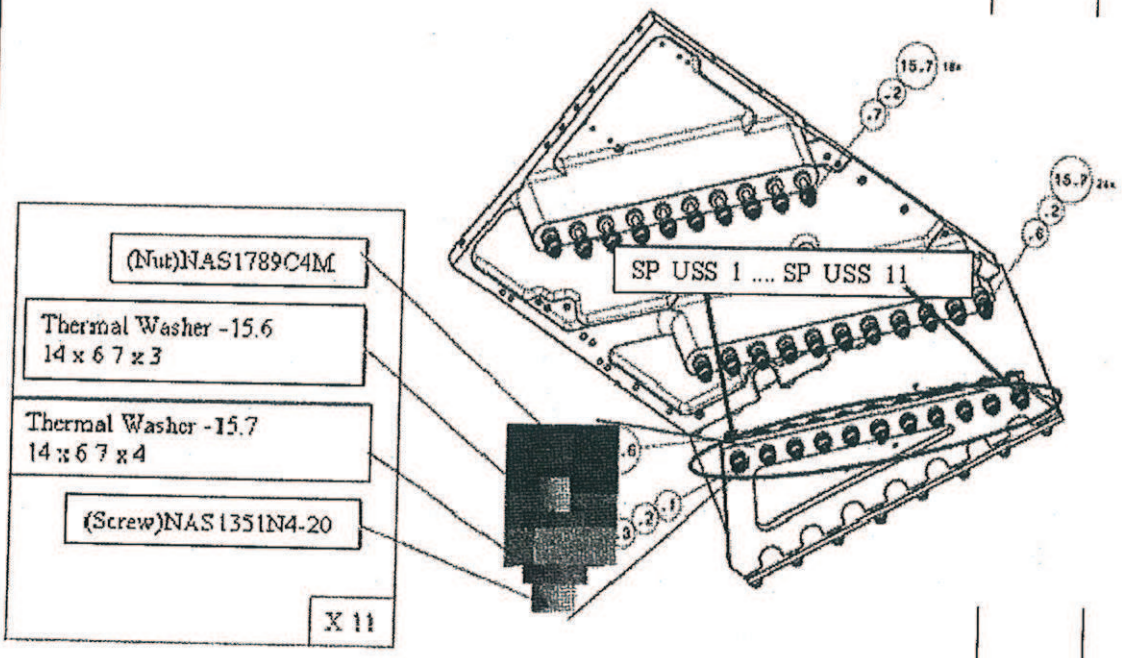
4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0309 M# _____ Cal Due Date 06/22/2009 JCH Jason

Torque Wrench- Final Torque

PN XQWC0112 M# _____ Cal Due Date 03/15/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
SP USS 11	20	110	JCH	Jason
SP USS 10	23	113	JCH	Jason
SP USS 9	25	115	JCH	Jason
SP USS 8	20	110	JCH	Jason
SP USS 7	27	117	JCH	Jason

p101 - p105 See Addendum IV

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	SP USS 6	20	110	JCH	Jason
	SP USS 5	15	105	JCH	Jason
	SP USS 4	18	108	JCH	Jason
	SP USS 3	19	109	JCH	Jason
	SP USS 2	21	111	JCH	Jason
	SP USS 1	22	112	JCH	Jason

End of online operation side plate to USS

For Flight Radiator Installation see Addendum IV.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

23. INSTALLATION OF **DUMMY START-UP RADIATOR TO USS SIMULATOR**

23.1 Prepare the DUMMY START-UP RADIATOR PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

23.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

23.3 Perform a visual inspection of the BASE PLATE AND SIDE PLATE INSERTS check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

23.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1351N3-16 x16	69.12 g
Washer	
NAS1149E0363R x16	15.01 g
Thermal Washer	
15.5 x 32	61.18 g

SCALE

23.5 PN AJ-4200 T 330107-57 M# _____ Cal Date 08/14/2008

JCH Jason

JCH Jason

Flight radiator in Addendum V

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO. 6. MOD NO.	5. Page 107 of 116 ATS 090127-1-R0	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
23.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
23.6.1	Check the bill of material in the assembly drawing.		
23.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN Flt-700/910-704 Lot# 370655 Exp. Date 6/09	JCH	Jason
23.6.3	Install the indicated components as shown in the figure below.		

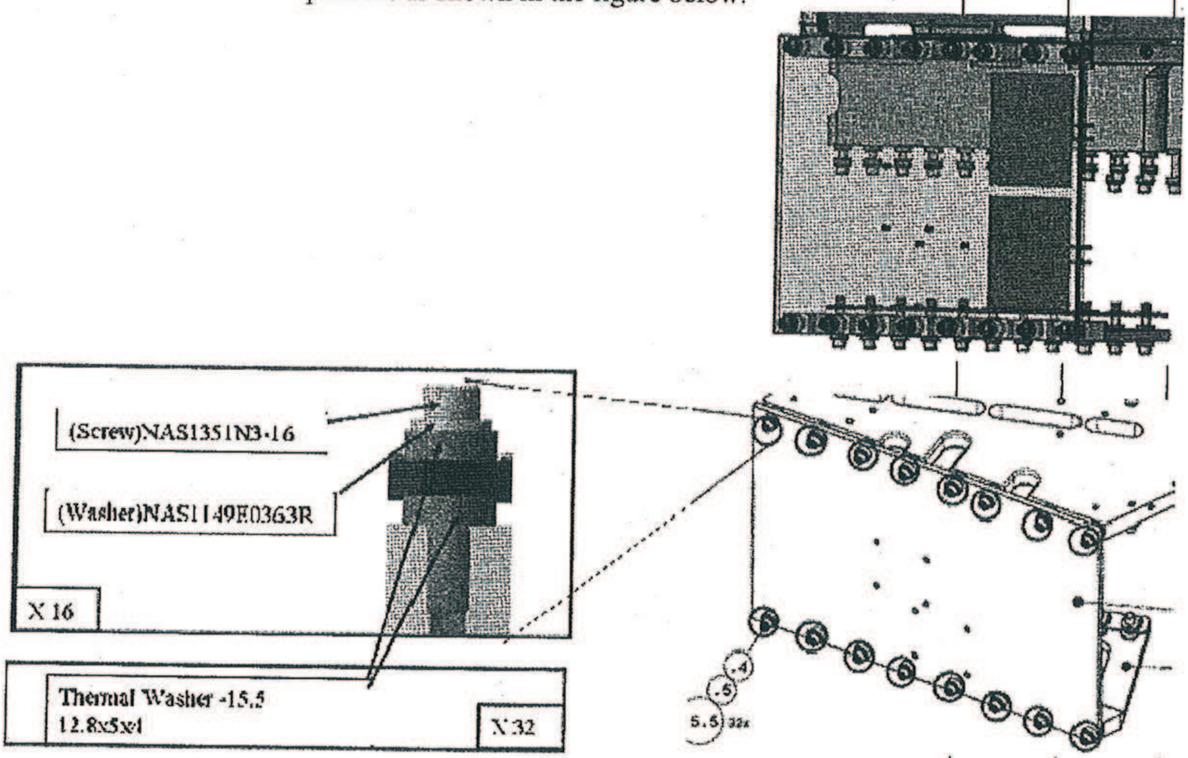


Figure 4: Connection radiator plate to base plate and side plate inserts

TAKE NOTICE THE DUMMY RADIATOR IS NOT SHOWN IN THIS PICTURE. USE HOWEVER THE SAME BOLT NUMBERING

23.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN 601EF23012-AMSB Lot# 13t999 Exp. Date 060208	JCH	Jason

Flight radiator in Addendum IV

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
23.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand)	JCH	Jason
23.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
23.9	Check this value with the table at the end of this ATS.		
	Locking torque shall be in between **2.0-18 inch*lbf (size 0.190)**.		
23.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE.		

[redacted]

Bolt/washer/nut and number	NAS number	LOT
Bolt	NAS1351N3-16	LOT# 46213
Washer	NAS1149E0363R	LOT# U4857
Thermal washer	H.K	LOT#
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-16	42.237	35.901

Flight radiator in Addendum V.

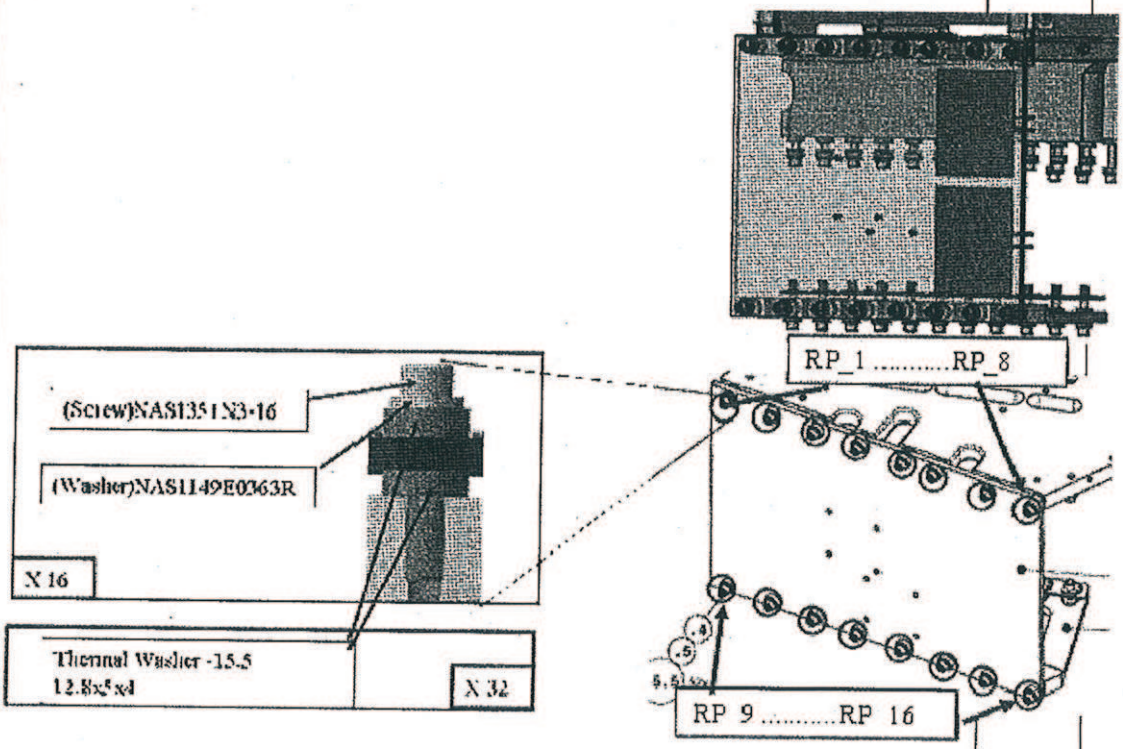
AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQWC0112 M# _____ Cal Due Date 08/14/2009 JCH Jason

Torque Wrench- Final Torque

PN XQWC0112 M# _____ Cal Due Date 08/14/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
RP_1	78 (over)	±8	JCH	Jason
BP_2	18	±8	JCH	Jason
BP_9	over (28)	±8	JCH	Jason
BP_10	over (20)	±8	JCH	Jason
BP_11	over (30)	±8	JCH	Jason

Flight radiator in Addendum V

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	5. Page 110 of 116
	4. ATS NO. ATS 090127-1-R0
	6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above)	**Locking Torque**	**Final Torque**		
	BP_12	over (35)	48	JCH	Jason
	BP_13	over (35)	58	JCH	Jason
	End of online operation dummy radiator plate installation				

FMS

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090108-1-R0 (127)

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

24. INSTALLATION OF **CONNECTOR TO COVER PANEL**

24.1 Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

24.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

24.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

24.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT
Bolt	
NAS1352C04-6 (36EA)	21.6 g
Washer	
MS35338-135 (36EA)	2.52 g
Nut	
MS35649-244 (36EA)	18.0 g

JCH Jason

SCALE

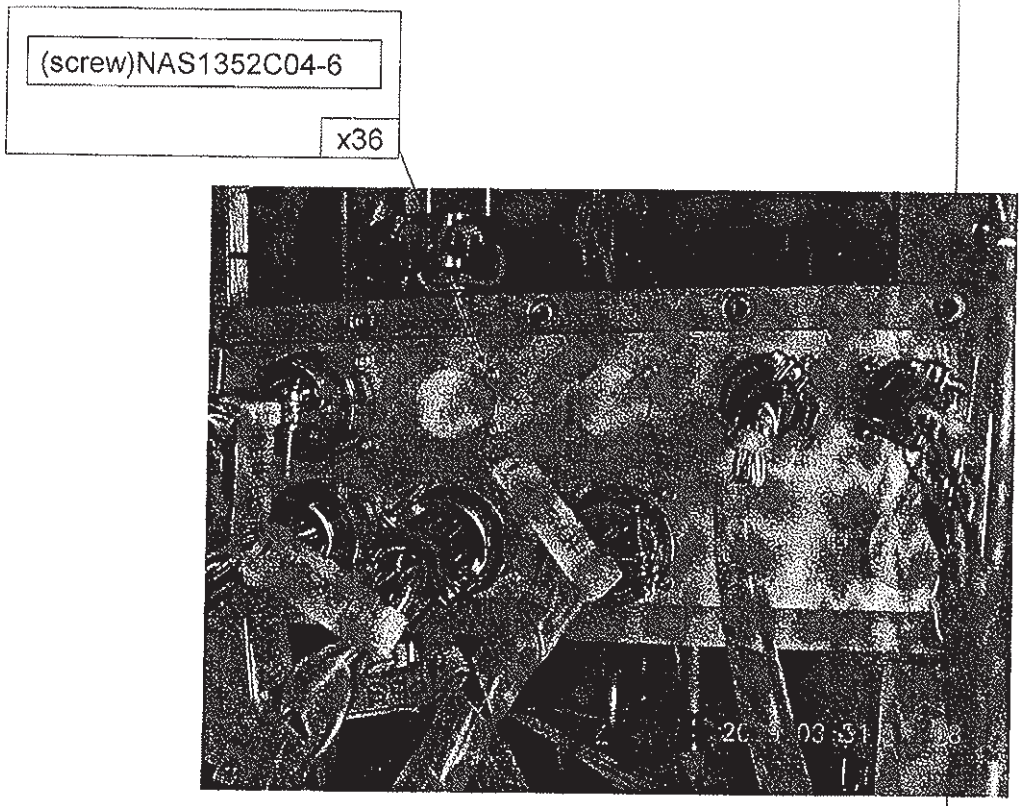
24.5 PN AJ-4200E 3201757 M# _____ Cal Date 08/14/2008

JCH Jason

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090~~108~~-1-R0 1x7
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
24.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
24.6.1	Check the bill of material in the assembly drawing.		
24.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN ~~515-700~~/910-704 Lot# 370655 Exp. Date 4/09	JCH	Jason
24.6.3	Install the indicated components as shown in the figure below.		



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CONTINUATION PAGE

4. ATS NO. ATS 090~~108~~127-1-R0

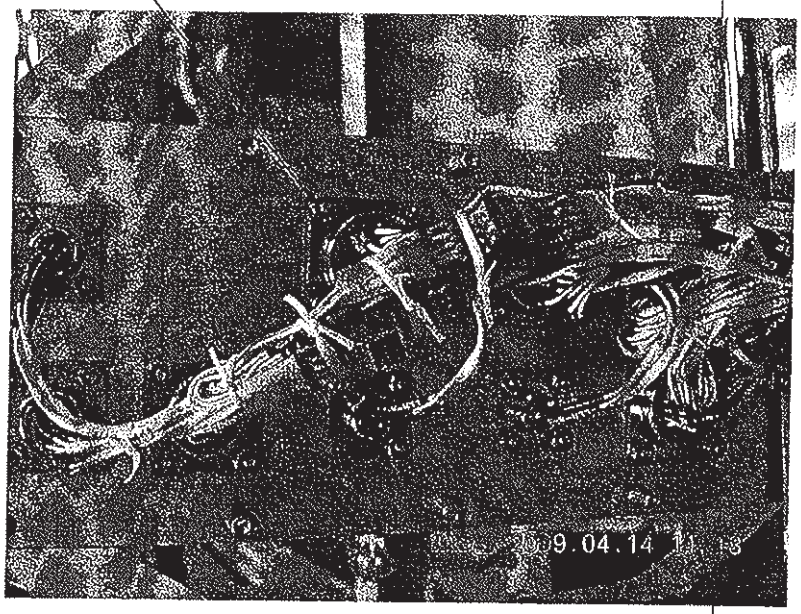
6. MOD NO.

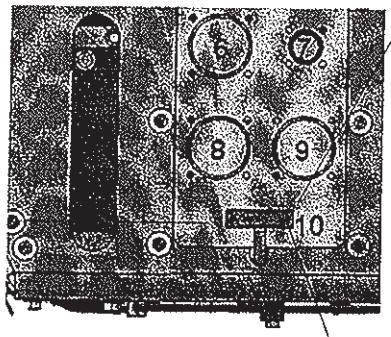
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

(Washer)MS35338-135

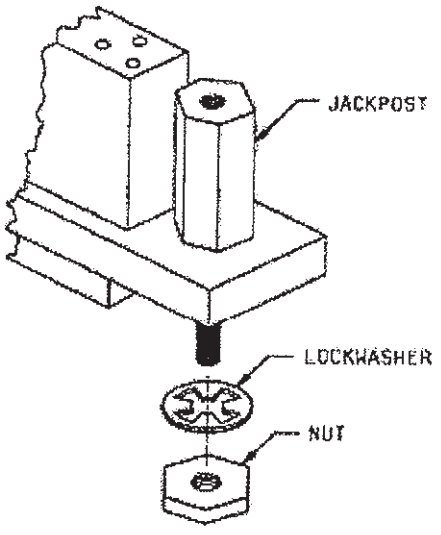
(Nut)MS35649-244

x36





Y



JACKPOST ASSY
M83513/05-07

x2

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090~~108~~ 127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Figure 4: Connection of connector to cover panel

24.6.4 Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN 601ZF-2502-AMSB Lot# 135999 Exp. Date 060208 — JCH — Jason

24.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number	NAS number	LOT
~~#~~ Bolt	NAS1352C04-6	LOT# No information
Washer	MS35338-135	LOT# "
Nut	MS35649-2224	LOT# "
		LOT#
		LOT#
		LOT#

JCH — Jason

24.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
Screw NAS1352C04-6	Max	Min
	7.459	6.34
M83513/05-07		

24.9 Check this value with the table at the end of this ATS.

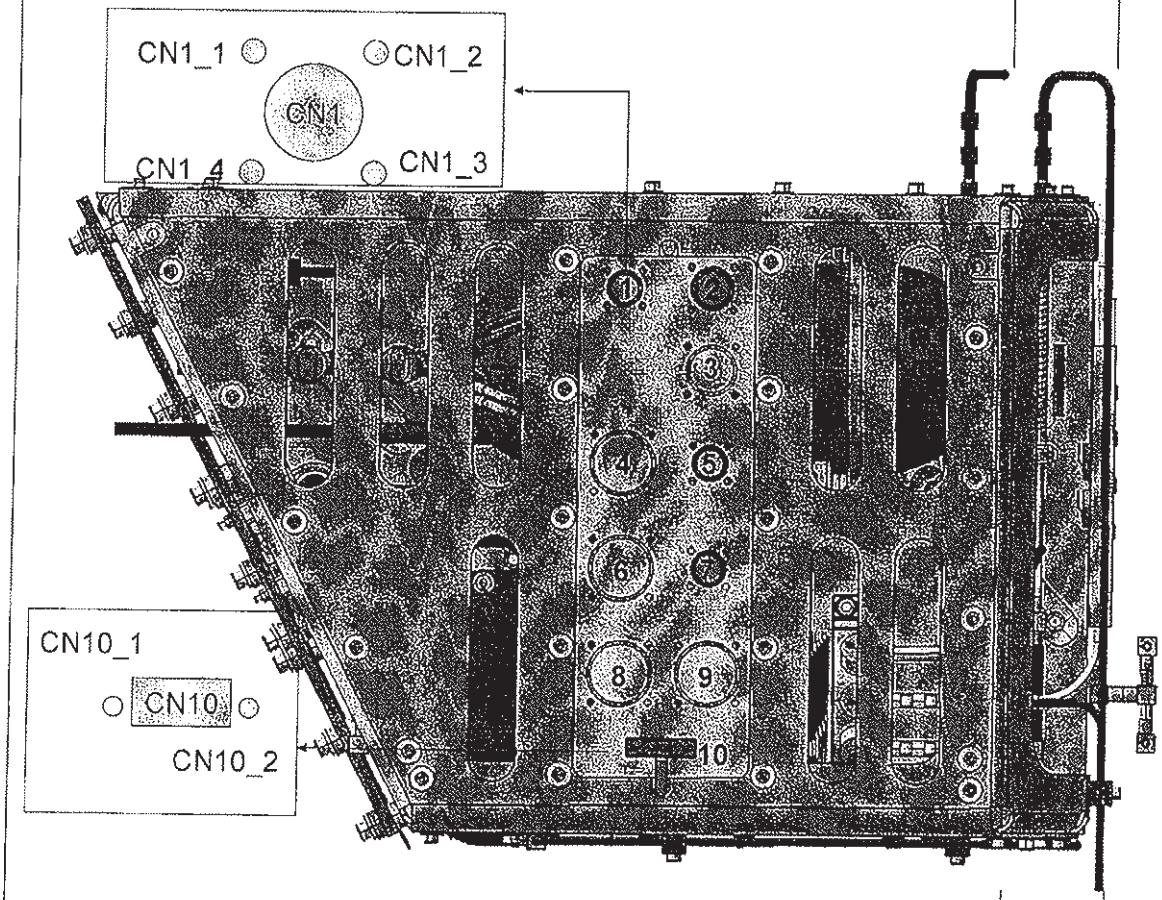
Locking torque shall be in between **0.5– 5 inch*lbf (size 0.112)**.

24.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090108-1-R0 (127)
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Torque Wrench- Final Torque

PN XQAA0357 M# _____ Cal Due Date 05/20/2009 JCH Jason

Bolt indication (see figure above)	Locking Torque	Final Torque		
CN1_1	less than 1	8	JCH	Jason
CN1_2	less than 1	8	JCH	Jason
CN1_3	less than 1	8	JCH	Jason
CN1_4	less than 1	8	JCH	Jason

5. Page 116 of 118

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CONTINUATION PAGE

4. ATS NO.	ATS 090~~108~~137-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	CN2_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason
	CN3_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason
	CN4_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason
	CN5_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason
	CN6_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason
	CN7_1	less than 1	8	JCH	Jason
	_2	less than 1	8	JCH	Jason
	_3	less than 1	8	JCH	Jason
	_4	less than 1	8	JCH	Jason

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CONTINUATION PAGE

4. ATS NO. ATS 090~~108~~ 127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)			22. TECH	23. QA/DV
	CN8 _ 1	less than 1	8	JCH	Jason
	_ 2	less than 1	8	JCH	Jason
	_ 3	less than 1	8	JCH	Jason
	_ 4	less than 1	8	JCH	Jason
	CN9 _ 1	less than 1	8	JCH	Jason
	_ 2	less than 1	8	JCH	Jason
	_ 3	less than 1	8	JCH	Jason
	_ 4	less than 1	8	JCH	Jason
	CN10 _ 1				
	_ 2				
	After consultation with MIT/AMS02 the bolts are potted as shown on picture oct 18. 2009. 16:42 (2nd) pictures. AMSTR-NLR-PR day 6			JvE 18/10/2009	
24.11	**End of online operation cover to base plate rivnut**				

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CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

25. Appendix 1: Seating Torque Values (2009_01_09)

Max and Min torque summary of TTCS Parts Issue 20090109

Joints	Bolt		Insert/Nut		Washer		Torque(in*lbf)	
	Dash Number	Number	Dash Number	Number	Dash Number	Number	Max	Min
TRD_Brackets_TTCB_Shared	NAS1351N4-24	9	MS21209F4-15	9	NAS1587-4	9	102.375	87.019
Base plate &USS	NAS1351N4-16	12	MS21209F4-15	12	NAS1587-4	12	102.375	87.019
Side plate &USS	NAS1351N4-20	11	NAS1789C4M	11	no	11	102.375	87.019
Start up radiator &base/sideplate	NAS1351N3-16	16	MS21209F1-25	16	NAS1149EO363R	16	42.237	35.901
	NAS1352N08-8	10	MS21209C0820	10	NAS1149EN832R	10	24.944	21.203
cover &base	NAS1352N06-6	2	NAS1330-06-106	2	no	0	13.861	11.782
Accumulator bracket &base plate	NAS1351N3-16	8	MS21209F1-15	8	NAS1149EO363R	8	42.237	35.901
Pump Bracket &start up radiator	NAS1352N06-10	8	NAS1291C06M	8	NAS1149EN532R	8	13.861	11.782
Aps/Dps &Base plate	NAS1352N08-11	8	MS21209C0820	8	NAS1149EN832R	8	24.944	21.203
RX& Base plate	NAS1351N3-16	8	MS21209F1-15	8	NAS 620 10 LC	8	42.237	35.001
Cold orbit heater &base plate	NAS1352N08-10	4	MS21209C0820	4	NAS1149EN832R	4	24.944	21.203
Controller &base plate	NAS1351N3-10	6	MS124605 10-32X1.5dia	6	no	0	42.237	35.901
Cover&CoverRibs	NAS1352N06-6	25	NAS1330-06-106	25	NAS1149EN532R	25	13.861	11.702
Cover Rib&Baseplate	NAS1352N06-12	2	NAS1330-06-106	2	no	0	13.861	11.782
Preheater&Baseplate	NAS1352N04-LB-6	0	no	0	no	0	7.459	6.34
ConnectorsPlate&Cover	NAS1352N06-6	10	NAS1330-06-106	10	NAS1149EN532R	10	13.861	11.702
PressSensors&Cover	NAS1352N06-8	8	MS21209C0620	8	no	0	13.861	11.782
PipeClamp&BasePlate	NAS1352N08-8	4	MS21209C0820	4	no	0	24.944	21.203
PipeClamp&PipeClamp	NAS1352N06-6	8	MS21209C0610	8	no	0	13.861	11.782
ClampBracket&Collar	[redacted]	7	no	0	NAS1149EN832R	7	26.863	22.834
Pipe-Fix&Clamp	NAS1351N06-10	8	MS21209F0625	8	NAS1149EN532R	8	15.662	13.312
Press&Saddle	NAS1351N08-12	8	MS21209F0820	8	NAS1149EN832R	8	26.863	22.834
Pipe clamp and cover	NAS1352N06-12	2	NAS1330-06-106	2	no	0	13.861	11.782

Addendum I to ATS 090127-1-Rd

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE
TTCB-S

4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

6.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand) 06/10/2009.

Bolt/washer/nut and number NAS number LOT

NAS 1352 N06 LB-12 LOT# 25500 — 10/11/2009 JVE

braycote grease 601 EF 25012 – AMS13 Lot 135999 POM: 060208. LOT#

Super koroporon Lot 500014 Exp. date 1/2010 LOT#

LOT#

LOT#

LOT#

LOT#

LOT#

6.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-12	13.861	11.782
	1,56	1,33 Nm

6.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.0-10 inch*lbf (size 0.138)**

0,113 - 1,13 Nm

6.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

Fits to RIVNUT: NAS 1330N06-106 Lot #: 05-10-06-2-1018. — 10/11/09 JVE.

Addendum I to ATS090127-1-R0
Replacement
NAS 1352 N06-12
with NAS 1352 N06-LB12

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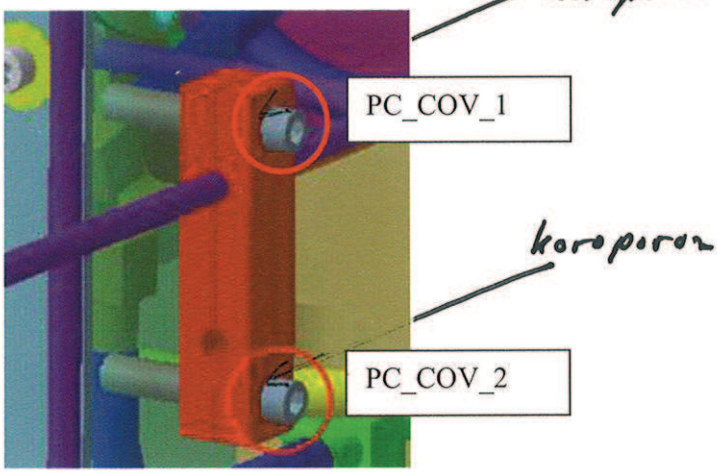
TTCB-S

4. ATS NO. ATS 090127-1-R0
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)
PN Tochnichi DB 15N4 M# 336477V. Cal Due Date 12/04/10

16/10/2009 J.V.E

Torque Wrench- Final Torque
PN Tochnici DB3N4 M# 317962 Cal Due Date 30/03/10

16/10/2009 J.V.E.

Bolt indication (see figure above)	Locking Torque	Final Torque
PC_COV_1	0.3 Nm	1.7 Nm
PC_COV_2.	0,6 Nm	2 Nm

6.11 **End of online operation PIPE BRACKET to COVER**

LOCATION: SERMS, TERNI, ITALY
DATE: 6 & 7 MAY 2009

ENGINEER: ELISA LAURI
GERRIT VAN DONK

Addendum II to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0 TTCB SECONDARY
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

13. INSTALLATION OF **PUMPS** ONTO THE TTCB ~~DUMMY~~ FLIGHT RADIATOR PLATE

13.1 Prepare the TTCS PUMP for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel — G.D.

13.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel — E.L.

13.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol — G.D.

13.4 Weight all the hardware to be installed, including fasteners. Record the weight — E.L.

ITEM	WEIGHT
SCREW NAS1352N06-10	1.1.3 g
NUT NAS1291C06M	2.9 g
WASHER NAS1149EN532R	4.5 g

SCALE

13.5 PN KB 10000-1 M# _____ Cal Date ✓ — E.L.

Addendum II to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

13.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN 25012-NSB Lot# 135999 Exp. Date DOM 060208 — E.L.

13.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand) — E.L.

Bolt/washer/nut and number	NAS number	LOT
SCREW	NAS1352N06-10	LOT# 85478
WASHER	NAS 1149EN532R	LOT# U0053
NUT	NAS1291 C06M	LOT# 74341
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#
		LOT#

13.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table. — E.L.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-10	13.861	11.782

(1.566 - 1.331 Nm)

13.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138).** (0.113 - 1.13 Nm)

13.10 Check this value with Table 1 at the start of this ATS. — OK
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

Addendum II to ATS 090127-1-Rev.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO.	ATS 090127-1-R0
6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
13.11	**End of online operation pumps**		

LOCATION: SERMS
DATE: 5 MAY 09

Addendum III
to ATS 090127-1-R0

ENGINEER(S): ELISA LAVID
GERRIT V. DONK

	5. Page 96 of 116	
AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0 ITCB SECONDARY
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
21.	RETORQUE TO FINAL TORQUE OF BP USS3_1 → 3_11 INSTALLATION OF **BASE PLATE TO USS SIMULATOR**		
21.1	Prepare the BASE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel → PERFORMED IN AIDC		
21.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel → PERFORMED IN AIDC		
21.3	Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol PERFORMED IN AIDC		
21.4	Weight all the hardware to be installed, including fasteners. Record the weight PERFORMED IN AIDC		

ITEM	WEIGHT

SCALE

21.5	PN _____	M# _____	Cal Date _____	N.A	

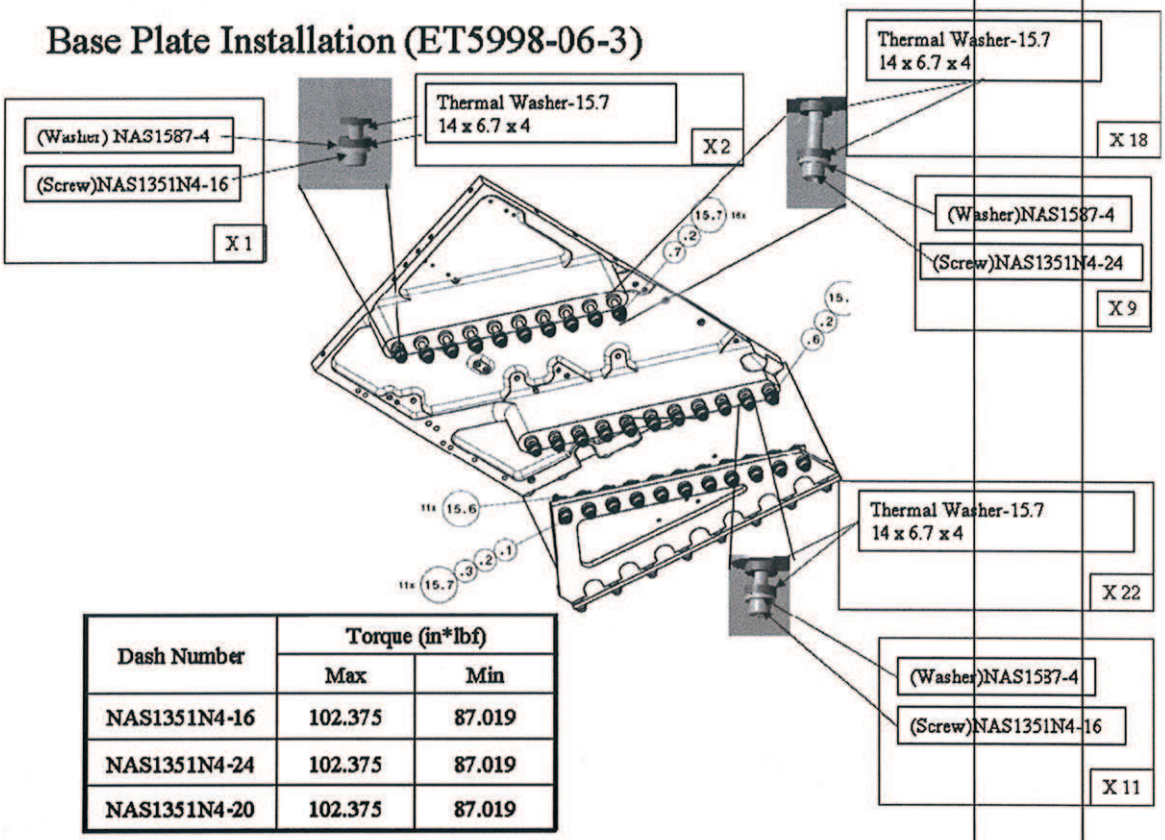
Addendum III to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
21.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
21.6.1	Check the bill of material in the assembly drawing.		
21.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. NO KOROPON BECAUSE IS ALODINE AREA Koropron primer - PN _____ Lot#_____ Exp. Date _____	E.L.	
21.6.3	Install the indicated components as shown in the figure below.		



Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Figure 4: Connection base plate to USS simulator

Addendum III to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
21.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). ALREADY PERFORMED IN AIDC Braycote Grease - PN _____ Lot#_____ Exp. Date _____	E.L.	
21.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) ALREADY PERFORMED IN AIDC [redacted] Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____	E.L.	
21.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.	E.L.	

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

(11,57 - 9,83 Nm)

21.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **3.5-30 inch*lbf (size 0.250)**.	E.L.	

(0.4 - 3.39 Nm)

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AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

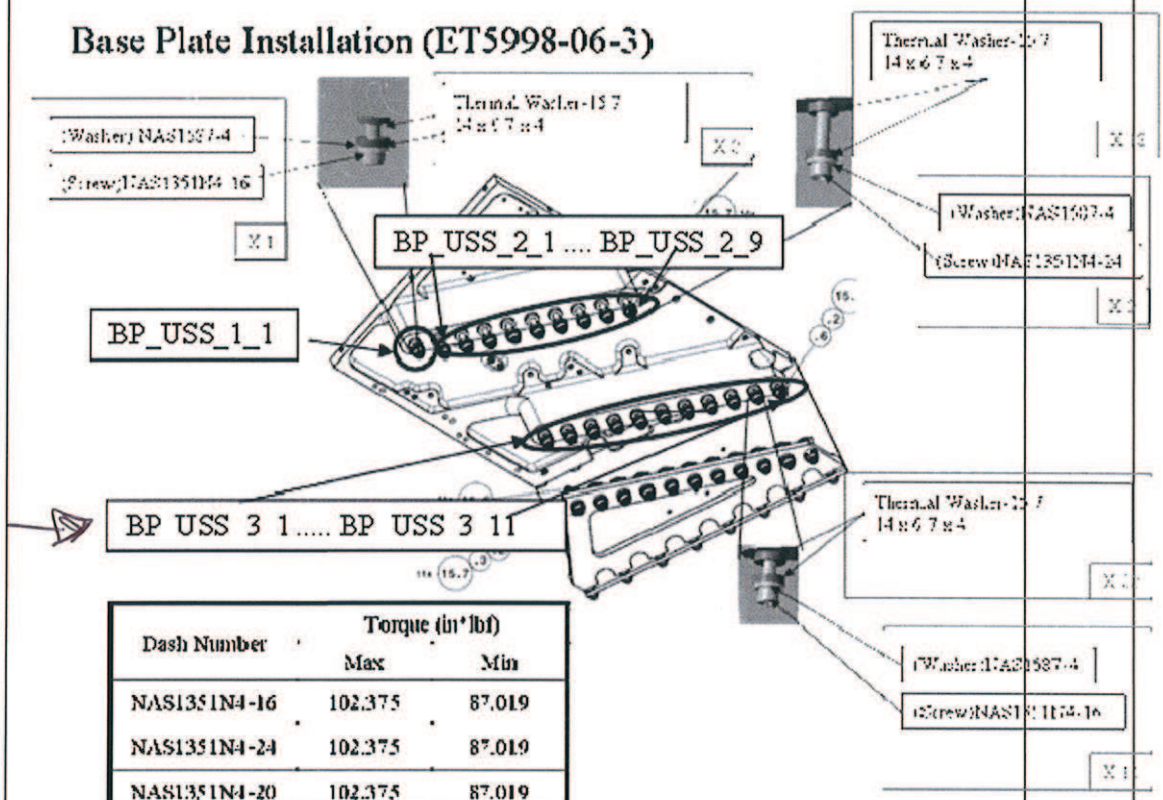
4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

21.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

Base Plate Installation (ET5998-06-3)



Dash Number	Torque (in*lbf) Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Torque Wrench- Locking Torque (locking is the same as running torque)

STERIS TOOL

PN 6BF021943 M# / Cal Due Date / E.L.

Torque Wrench- Final Torque

NLR TOOL

PN BT-SF-725 M# 79851 Cal Due Date JULY 2009 E.L.

Bolt indication (see figure above)	Locking Torque	Final Torque
BP USS 3-11	1.0 Nm	100 inch·lbf
BP USS 3-09	1.0 Nm	100 inch·lbf
BP USS 3-07	1.5 Nm	110 inch·lbf

Addendum III to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Bolt indication (see figure above)	Locking Torque	Final Torque
BP USS3-05	0.7 Nm	100 in. lbf
BP USS3-03	2.5 Nm	115 in. lbf
BP USS3-01	2.0 Nm	115 in. lbf
BP USS3-10	2.0 Nm	105 in. lbf
BP USS3-8	1.0 Nm	100 in. lbf
BP USS3-6	1.5 Nm	105 in. lbf
BP USS3-4	1.0 Nm	100 in. lbf
BP USS3-2	2.0 Nm	115 in. lbf

21.11 End of online operation base plate to USS

LOCATION : DERTS
DATE: 5/MAY/09
Addendum #1 to ATS 090127-1-R0
ENGINEER: ELISA LANDI, GERRIT V. DONIC

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0 TTCB SECONDARY
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	RETORQUE TO FINAL TORQUE		
22.	INSTALLATION OF **SIDE PLATE TO USS SIMULATOR**		
22.1	Prepare the SIDE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel PERFORMED IN AIDC	E.L	
22.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel IN AIDC	E.L	
22.3	Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol IN AIDC	E.L	
22.4	Weight all the hardware to be installed, including fasteners. Record the weight IN AIDC	E.L	

ITEM	WEIGHT

SCALE

22.5	PN _____	M# _____	Cal Date _____	N.A.
22.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision			

Addendum IV to ATS 090127-1-Rd

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CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
22.6.1	Check the bill of material in the assembly drawing.		
22.6.2	[redacted] apply a thin layer of Koropron primer in between washers and base plate and or component. NO KOROPON APPLIED Koropron primer - PN _____ Lot#_____ Exp. Date _____	E.L.	
22.6.3	Install the indicated components as shown in the figure below.		

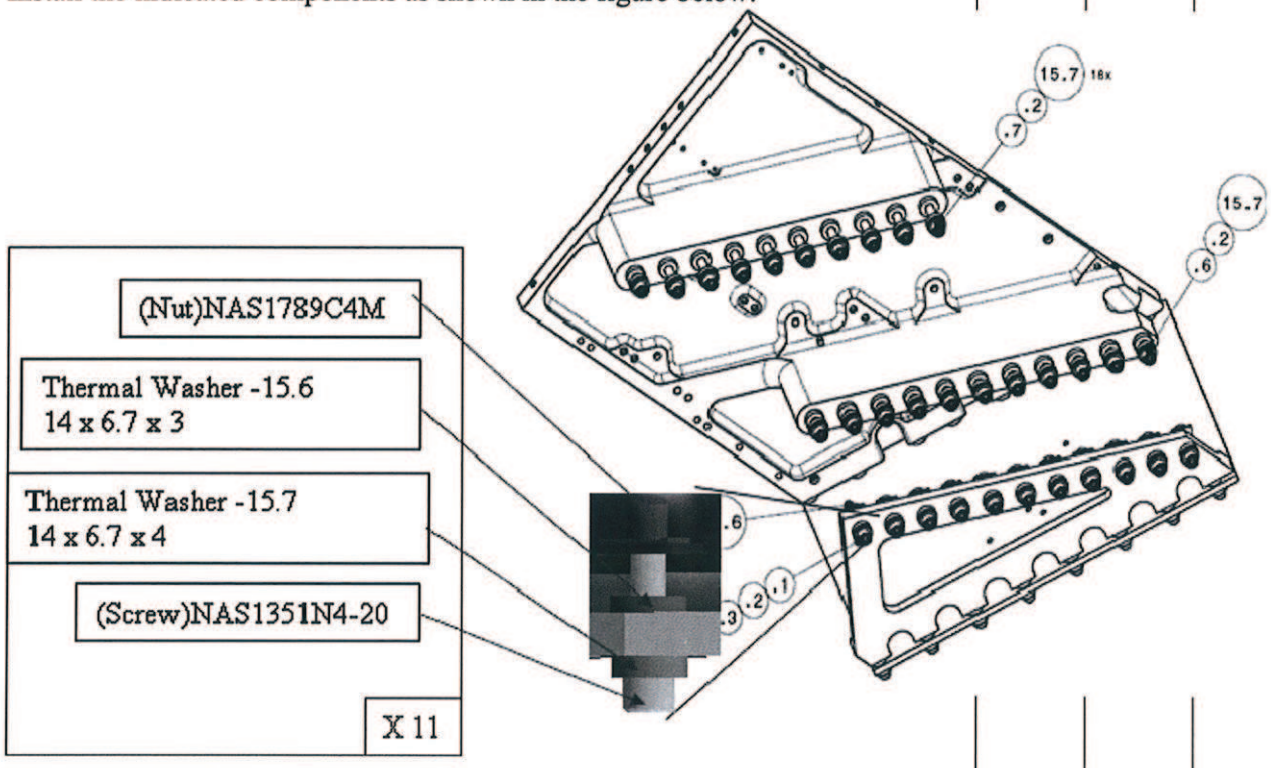


Figure 4: Connection side plate to USS simulator

22.6.4	Apply a thin layer of [redacted], to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN _____ Lot#_____ Exp. Date _____ NO GREASE APPLIED	E.L.	

Addendum IV to ATS 090127-1-R0.

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
22.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) BEREFORMED IN AIDC USE INSTALLATION BOLTS NOT FLIGHT BOLTS AT AIDC Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____	E.L.	
22.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.	E.L	
22.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **3.5-30 inch*lbf (size 0.250).** (0.4 ÷ 3.39 N.M)	E.L.	
22.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE.		

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-20	102.375	87.019

(11,57 ÷ 9,83 N.M)

Addendum IV to ATS 090127-1-Kd

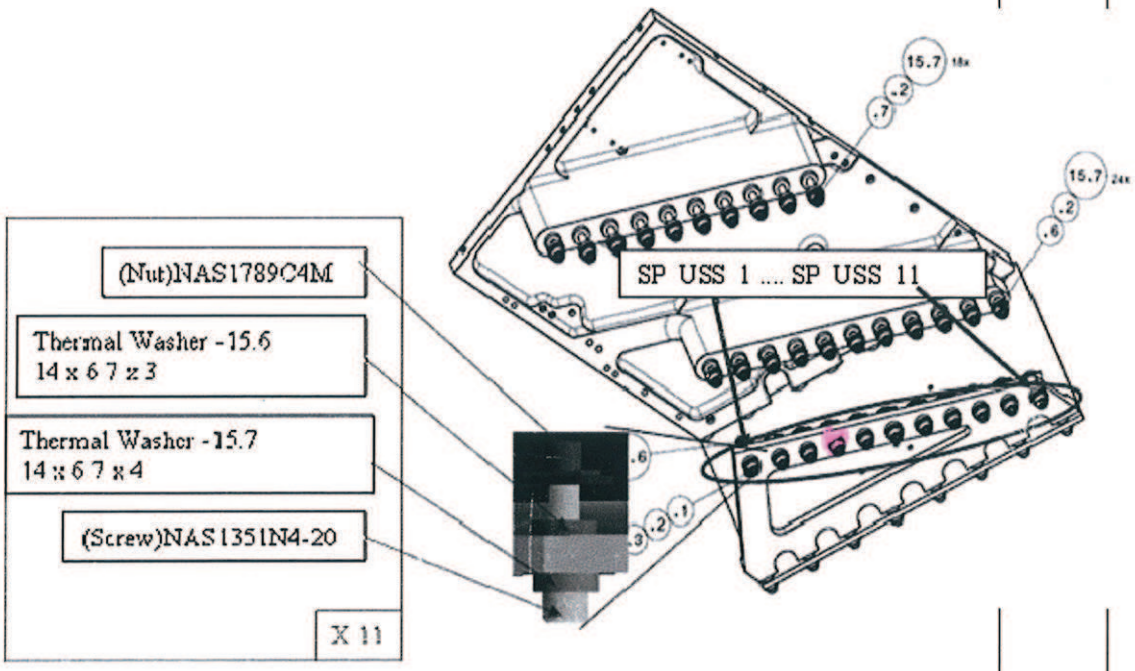
AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

SORTS TOOL

PN GBF 02 1973 M# / Cal Due Date / E.L.

Torque Wrench- Final Torque

NLR TOOL

PN BT-ST-725 M# 7985M Cal Due Date JULY 2009 E.L.

Bolt indication (see figure above)	Locking Torque	Final Torque
SPS USS 11	0.8 Nm	100 inch. lbf
SPS USS 9	0.83 Nm	100 inch. lbf
SPS USS 7	1.0 Nm	100 in. lbf
SPS USS 5	0.65 Nm	105 in. lbf
SPS USS 3	0.5 Nm	100 in. lbf.

E.L.

Addendum IV to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Bolt indication (see figure above)	Locking Torque	Final Torque
SPS USS 1	1.2 N.M	105 in-lbf
SPS USS 10	0.45 Nm	100 in-lbf
SPS USS 8	0.9 N.M	100 in-lbf
SPS USS 6	0.75 Nm.	100 in-lbf.
SPS USS 4	0.2 Nm.	95 in-lbf.
SPS USS 2	0.8 Nm.	100 in-lbf.
~~SPS USS~~		

End of online operation side plate to USS

LOCATION: SCPMS, TERNI. ITALY
DATE: 6 & 7 MAY 2009
ENGINEER: ELISA LAUDI
GERRIT V DONK
Addendum IV to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS)
CONTINUATION PAGE

4. ATS NO. ATS 090127-1-R0 TTCB SECONDARY
6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

23. INSTALLATION OF **DUMMY START-UP RADIATOR TO USS SIMULATOR**

23.1 Prepare the DUMMY START-UP RADIATOR PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

23.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel — E.L

23.3 Perform a visual inspection of the BASE PLATE AND SIDE PLATE INSERTS check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol — E.L

23.4 Weight all the hardware to be installed, including fasteners. Record the weight — E.L.

ITEM	WEIGHT
RADIATOR PLATE (HEATERS INCLUDED)	961,7 g
NAS 1351 N3-16 x 16 EA	68,7 g
NAS 1149 E0363 R x 16 EA	15,2 g
THERMAL WASHER 15.5 x 32 EA	61,2 g

SCALE

23.5 PN KB 10000 - 1 M# _____ Cal Date _____ — E.L

Addendum V to ATS 090127-1-R0

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
23.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) USE INSTALLATION BOLTS NOT FLIGHT BOLTS AT AIDC Bolt/washer/nut and number NAS number LOT SCREW NAS1351N3-16 LOT# 46213 WASHER NAS1149E0863R LOT# UH857 _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____ _____ _____ LOT# _____	E.L.	
23.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.	E.L	

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-16	42.237	35.901

(4.77 - 4.058 N·m)

23.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **2.0-18 inch*lbf (size 0.190)**. (10.226 - 2.03 N·m)		
23.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE.	OK	

Addendum V to ATS 090127-1-RØ

AMS-02 TASK SHEET (ATS)
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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

Bolt indication (see figure above)	Locking Torque	Final Torque
RP-6	3.0 Nm	65 inch. lbf
RP-7	2.5 Nm	60 inch. lbf
RP-8	2.5 Nm	60 inch. lbf.
RP-9	1.5 Nm	55 inch. lbf.
RP-10	1.5 Nm	55 inch. lbf.
RP-11	2.0 Nm	55 inch. lbf.
RP-12	3.0 Nm	65 inch. lbf
RP-13	2.5 Nm	60 inch. lbf.
RP-14	2.5 Nm	60 inch. lbf.
RP-15	3.5 Nm	65 inch. lbf
RP-16	2.5 Nm	60 inch. lbf

End of online operation dummy radiator plate installation

TO REMOVE TTCB FROM TRANSPORTATION FRAME 1 BOLTS IS REMOVED AND RE-TORQUED: 07/05 E.L.

RP-15 2.0 Nm 55 inch. lbf.